Temo
Consulting

Consultancy
for Engineering
and Project
Management

Building Services

DESIGN FEATURES REPORT

For

Proposed Resort Development, Nananu-i-Cake

Prepared For

MAX JUBIN

P.A.T Consulting Ltd
Level 3
16 Gorrie St
P.O. Box 16567
Suva, Fiji
Email ptemo@temoconsulting.com
Telephone + 67 9 3316 478
+ 67 9 3317 733
Facsimile + 67 9 3303 234

REPORT DETAILS

Project Name: Proposed Resort Development, Nananu-i-Cake

File Name: Proposed Resort Development - DFR

Project Number:

QA Check & Document Issue Status

Date	Rev	Issued to	No. of Copies	Approved for Issue
22/06/21	0 – DFR	Client/Architect	1	PAT

I N D E X

Page No

I N D E X

Page No

1. ELECTRICAL SERVICES

1.1 GENERAL

The Electrical Services systems will comply with the following except where otherwise noted:

a) Local Government and authority Regulations.

b) Energy Fiji Limited (EFL) regulations

c) The latest issue of the applicable Australian Electricity Authority (AEC) standards.

d) Good engineering practice and international standards where applicable.

1.1.1 Reference Documents and Standards

ASNZS 3000:2007	Wiring Rules
NZS 6703:1984	Interior Lighting Design
AS/NZS 1680.2.3 1994	Interior Lighting
NZS4219	Seismic Resistance of Engineering Systems in Buildings

1.2 SCOPE OF WORKS

The Electrical Services works shall include but not limited to the following:

a. Supply and installation of Prime rated 415/240V, 50Hz Diesel Generators.
b. Supply and installation of Low Voltage Mains Switchboards with ATS and synchronising panels for Generator inputs.
c. Supply and installation of 415/240V to 11kV, 50Hz step up Transformers.
d. Supply and installation of 11kV HV switchgears.
e. Supply and installation of Diesel Fuel Tank with the capacity of dispensing fuel for a seven days' continuous operation of the Generator at its 100% capacity.
f. Supply and installation of 11kV HV cables from the HV switch gear panel for HV electrical infrastructure reticulation.
g. Supply and installation of 11kV-415/240V, 50Hz step down pad-mounted transformer dedicated for the different zones for the development.
h. Supply and installation of Main Distribution boards for feed in to the building distribution boards.
i. Supply and installation of mains cabling from the Generator up to the Main Switchboard. These mains shall be run on trench with PVC conduits underground.
j. Supply and installation of Sub-mains from MSB to the 415/240V to 11kV, 50Hz step up Transformers.
k. Supply and installation of cabling from the 415/240V to 11kV, 50Hz step up Transformers to the HV switchgear panels.
l. Supply and installation of sub mains from 415/240V to 11kV, 50Hz step up Transformers to 11kV-415/240V, 50Hz step down pad-mounted transformer dedicated for the different zones.
m. Supply and installation of cable support system, underground conduits, cable trays and cable ladders necessary for cable reticulation.

n. Supply and installation of all materials needed in the Grounding system installation including all bonding conductors, earthing bars, clamps, earthing pit, disconnect test box and all connecting accessories as required.

2.3 POWER SUPPLY

Island Power Source

The Power supply for the development shall be generated on site via suitably sized 415/240V, 3 phase, 50Hz Diesel Generators. The generators shall be Prime rated and be capable of running for more than 24 hours before being switched on to the standby mode. The configuration of the generators shall be such that there is 100% redundancy at any time of the operation. The generators shall also be synchronised to ensure that the generators are running efficiently and are not overloads at any point in time.

The current estimation of the electrical load for the whole development is in the region of 2MVA. The Overall load may vary once all the electrical loads have been determined during the final design stage.

It is anticipated that 4 x 1 MVA 415/240V, 3 phase generators be installed on site. All the generators will be wired and controlled as such that each generator shall be running for at least at an interval of 24 hours before coming to rest. It is expected that during the off peak load, only 1 x 1000kVA generator will run to supply the required loads. However, as the load increases during the peak hours, the Second 1000kVA generator shall start and synchronise with the first generator. The other two generators shall act as a back power source. Upon 24 hours of operation, the 2 standby generators shall come on and take the load while the generator in operation cools down before shutting down.

The Electrical plant shall be located in a dedicated plant yard located near the Marina along with the LV and HV Main Switchboards. The relevant Step Up transformer and Diesel Storage tank shall be part of the Electrical Plant Yard. The diesel tank shall be suitably sized to hold 3 days of fuel supply for the continuous operation of the generators.

It is essential that the Generators are Prime rated and suitable for coastal marine areas. The generators need to have appropriate marine grade anti corrosion finish for protection against rust. The generators shall be cable of communicating with each other and have the necessary alarm notification to notify the maintenance staffs of any possible faults.

The load requirement can only be confirmed during the detailing design phase where all heating, air-conditioning, connected equipment and number of lighting fixtures and GPO’s required are already defined. In addition to this, other electrical loads such as lifts, pumps and some sundry systems which needs power supply shall be included. However, the sequence of operation and arrangements shall remain as noted above.

Mainland Power Supply

It is anticipated that part of the Islands facilities such as the Laundry, Offices, Marina, Garbage storage rooms, etc. will be based on the Mainland. Thus a dedicated plant yard will also need to be provided for the mainland based facilities. It is understood that the mainland power supply will be connected to the EFL grid. A dedicated 11 kVA/ 415V, 50 Hz, 3 Phase step down transformer shall be provided. It is expected that either 300kVa or a 500kVA transformer will be sufficient for serving the electrical loads for the mainland facility.

A 415/ 240V, 50Hz 3 phase, standby Generator shall also be provided to provide backup power supply for the mainland facilities.

The Transformer and the Generator shall be connected to the Main Switchboard within the plant yard in close proximity to the Generator and transformer. The Main Switch board shall have automatic changeover switch, metering, suitably sized buss bars and MCCB necessary for sub main cable protection.

Future Power Supply Connection to the Island

It is anticipated that the power supply for the Island shall also be connected to the main EFL Grid via underwater mains cabling when supply is available from the EFL grid.

A dedicated HV switch gear room will need to be provided on the Main land services Plant yard to house the 11kV HV switchgears. The underwater marine grade mains cable will be terminated to the 11kV HV switchgears. Suitable 11kV Marine grade underwater cables running in conduit and shall be installed by specialist contractors who will submit details to EFL and the consultant for approval. The island shall also have a dedicated HV switchgear room for termination of the 11kV mains cabling. The reticulation from there on shall 11kV to the individual zone transformers and step down to 415V at the zone transformers.

1.4 STEP – UP & STEP DOWN TRANSFORMER

Due to a fairly large Electrical Infrastructure Reticulation it is viable to have 11kV HV reticulation throughout the development. Thus the 415 Volts of power generated at the Plant Yard will have to Step-Up to 11Kv via suitably sized Step-Up transformers. It is anticipated that 2 x 1MVA Step-Up transformers will be sufficient for the development.

The step- Down Transformers shall be located in each zone. These transformers shall step down 11kV to 415/240V and feed the main distribution boards for the respective zone.

1.5 MAIN SWITCH BOARD

The Main Switch Board (MSB) shall be installed in the dedicated MSB room at the Services Plant Yard. Based on the arrangements of Generators and the Step-Up Transformers, an intermediate LV switchboard needs to be provided to take in the inputs from the generator and feed the Step-Up Transformers. A HV Main switch board will also be required to take in the input from the Step-Up transformers and provide outgoing feeds to the 11KV HV reticulation around the site.

The switchboard design features are summarised but not limited to the following:

- Capacity with 25% allowance shall not exceed the full rating of the supplied transformer and generator. Internal construction, shall be provided with polycarbonate plastic shield in all exposed busbars and termination point.
- Busbar rating shall be more than the rating of the main circuit breakers to withstand the un-expected short circuit of 50kA capacity for at least one second.
- Shall be of the modular construction to allow for any future expansion or extension to accommodate future loads. The minimum Ingress Protection (IP) shall be IP44 Form 4 segregation as to AS/NZS 3439 as a minimum requirement.
- With front and back access at 1000 mm minimum clearances at back side and 1500mm front side and at least 800mm at both sides. These dimensions are minimum requirement.
- MSB shall be a Floor Standing type with top and bottom entry provision. Gland plates shall be provided and all cables coming in and out shall be provided with appropriate cable glands as per cable size. Foams are strictly not allowed to cover or fill gland plate hole opening. Any holes not used shall be covered with plastic or rubber bushing.

Only fully calibrated metering device ammeter, voltmeter and frequency meter and a clear visual indicator for electronic digital metering such as 3-phase power analyser, power meter with data storage capacity capable of monitoring all electrical data thru LAN or PLC network interface shall be used.

1.6 MAINS & SUB-MAINS CABLE RETICULATION

The power reticulation from the 11kV HV Main Switch Board to the individual Step-Down transformer shall be via suitably sized 11 kV 2 core XLPE compacted HD underground cables. This shall be reticulated in Underground UPVC conduits. Due to the long cable runs the 11kV HV reticulation will be fairly cost effective and ensure minimal voltage drops along the transmission lines.

The sub mains cable reticulation from the Step-Down transformer to the LV (415V) Main Distribution boards shall be via suitably sized Cu/XLPE/PVC laid in an underground UPVC conduits. Further reticulation from the Low Voltage MDB's to the individual building/ room distribution board and the relevant pillar boxes shall also be via suitably sized Cu/XLPE/PVC cables in underground conduit.

1.7 POWER SUPPLY RETICULATION

The building reticulation shall consist of Cu TPS cabling. Cabling shall generally be:

- Lighting Sub-circuits 1.5mm^2
- Power Sub-circuits 2.5mm^2

Specific Supplies such, as mechanical shall be sized in accordance with the load requirements, type of motors, motor controller and manufacturer's recommendation.

The room distribution board shall be designed to cater for the installed loads with 20% spare capacity above the total calculated loads to provide an allowance for future requirements.

1.8 POWER FACTOR CORRECTION

Automatic Power factor correction shall be installed separately or can be provided within a dedicated cubicle(s) in the main switchboard or could be in a separate panel rated to match the inductive load and to maintain power factor above 0.85 as required by the supply authority. However, the calculated capacitor bank for power factor correction for this panel can give up to 0.90 with a three steps auto selection. All components within the power factor control cubicle shall be rated for the switching of inrush currents. Ripple and blocking chokes will be provided as per supply authority requirements. This shall also have the auto discharged resistors for safety handling of maintenance service crew. Power Factor meter shall be provided in the enclosure.

1.9 KWHR METERING & POWER ANALYSER

KWH metering will be provided in accordance with the requirement of the client and AS/NZ standards. As an additional requirement, a digital multi-metering such as 3-phase power analyser with data storage capacity capable of monitoring all electrical data through LAN or PLC network capable of interfacing with Building Management System (BMS).

1.10 DISTRIBUTION BOARDS

The distribution board to each building shall be suitably located in close proximity to the building for the sub circuit termination. These building distribution board will be fed from the Main Distribution board dedicated for the particular zone. These DB's shall have a 25% spare capacity for future loads. Spare circuit breakers shall already be installed for future ready connection when delivered.

The mechanical services switchboard (MSSB) will be located at the mechanical room where the mechanical loads are located. The MSSB will provide power supply to all air-conditioning and ventilation load for the building. The MSSB will be equipped with TVSS and phase failure relay with over voltage and under voltage function.

The construction, segregation rating and capacity of the three phase distribution boards will be Form 2b segregation and IP44 protection rating. The detailed feature summary of these distribution boards is as follows:

- Capacity equal to expected maximum demand with 25% spare capacity for future loads. The internal construction, bus-bars and circuit breakers shall be designed to meet the required capacity above.
- HRS corrosion proof type steel with powder-coated finish shall be provided to match the architectural colour requirements.
- Form 2b segregation to AS/NZS 3439, IP 44 protection rating.
- Wall mounted or free standing depending on the size of circuit breakers, Front Access with Top and Bottom entry gland plates
- With TVSS if supplying majority electronics loads.
  .

Single phase distribution boards located within room accommodation units will be Form 1 type, proprietary polycarbonate construction, and wall mounted recessed type.

1.11 ELECTRICAL SERVICES DESIGN CRITERIA

The electrical services are based on the following design criteria and parameters:

Facility	Applicable Standards	Details
Power Supply	AS/NZS 3000, AS/NZS 3008.1.1, AS/NZS 3439.1 & .3 and Client Design Standards	11kV Medium Voltage supply, 415/240 Volts, three phase, four wire MEN system for Low Voltage, 50 Hz all systems.
Structural For Electrical Services	NZS 4219	Fixing and support in accordance with seismic requirements.
Reticulation Design		Volt Drop - Consumer mains < 1.0%, Sub mains approx. 2.5%, Final sub-circuits, 5.0%
Main Switchboard	AS/NZS 3439	Free standing, Mild Steel construction, powder coated finish, Front and back access, top and bottom cable entry, modular construction, expandable with built-in spare space of 20% Busbars to substation rating plus 20% Moulded case breakers less than 1600 A Air circuit breakers 1600 A and above Fault Level - Min 50 kA for 1 second Max Demand < 1600 A, Form 3B, > 1600 A, Form 4

Facility	Applicable Standards	Details
Distribution Boards	AS/NZS 3439	Miniature CB's, < 100 A, Rating 20% above initial load Main switch always in separate cubicle within DB Final sub-circuit Protection Circuit breakers - Min 6kA fault level RCD protection breakers on circuits where required by AS3000-2002
Electrical Maximum Demand	AS/NZS 3000.2002	Diversity applied to suit load conditions that vary with type of space occupied.
HV Supply & Reticulation	AS/NZS 3008.1.1	XLPE/PVC Sheathed Copper Cables
LV Mains Supply	AS/NZS 3008.1.1	Max. Demand + 20%, or capacity of substation Fault rating to Network Service Provider requirements XLPE/PVC Sheathed Copper Cables
Sub-mains	AS/NZS 3008.1.1	Capacity Max. Demand + 20% Mechanical FLC of connected equipment Fire equipment MIMS, Radox FR, Fire stop Full size neutrals. 4 core, PVC/PVC copper cables less than 100 A., XLPE/PVC otherwise
Final sub circuits	AS/NZS 3008.1.1	Power 2.5mm^2 min. Lighting 1.5mm^2 min., TPS cables Max 80% utilisation of AS3000 Initial spare outlet capacity of 20%.
Lighting	AS/NZS 1680	As per Code as minimum, refer to Section 2 for specific light level requirements for individual areas Lighting design to take into consideration: Glare, Uniformity, Energy Efficiency, Colour Rendering, Aesthetics and Architectural requirements
Emergency Lighting Systems	AS / NZS 2293	Powered from essential services section of switchboards with diesel generator backup. Emergency and exit lighting fixtures to have built-in NiMH batteries and chargers and test switches.

1.12 ELECTRICAL SERVICES DRAWINGS

Electrical Services Drawings

DRAWING SCHEDULE

DWG. No.	DETAILS	REV	DATE
PS-E000	Drawing Schedule, Legends & Symbols and Abbreviations	0	21JUN21
PS-E001	Proposed Electrical Services Infrastructure Connection to Main Land	0	21JUN21
PS-E002	Proposed Mainland Electrical Infrastructure Plant Yard - Enlarge View	0	21JUN21
PS-E003	Proposed Island Electrical Infrastructure Plant Yard - Enlarge View	0	21JUN21
PS-E010	Site Plan - Electrical Infrastructure Layout	0	21JUN21
PS-E100	Electrical Infrastructure Plant Yard - Enlarge View	0	21JUN21
PS-E101	HV Switchgear, MDB Room & Transformer Layout - Enlarge View	0	21JUN21

LEGENDS & SYMBOLS

- Power Factor Corrector Panel
- Synchronizer Panel
- Distribution Board
- LV & HV Switch Board
- CP — Electrical Cable Access Pit to be provided at every 30 meters
- Generator
- Transformer
- FT — Fuel Tank
- HV — High Voltage (HV) Cable
- LV — Low Voltage (LV) Cable
- FUEL — Fuel Line

ABBREVIATIONS

HV - High Voltage

LV - Low Voltage

MDB - Main Distribution Board

Tx - Transformer

Genset - Generator

FT - Fuel Tank

COORDINATION ISSUE

Notes

1. This Drawing shall be read in conjunction with the Design Features Report.
2. The final locations of all services plant areas are subject to change upon further coordination with all parties involved.

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title

PROPOSED RESORT DEVELOPMENT

Client

Max Jubin

Architect

ARCHITECTS PACIFIC
Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant

Temo Consulting
Consultancy for Building Engineering & Project Management
P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI
Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

Designed	AAP
Drawn	AAP
Checked	RRC
Approved	PAT
Date	JUN 2021
A3 Scale	NTS
A1(NTS)	
A2(NTS)	

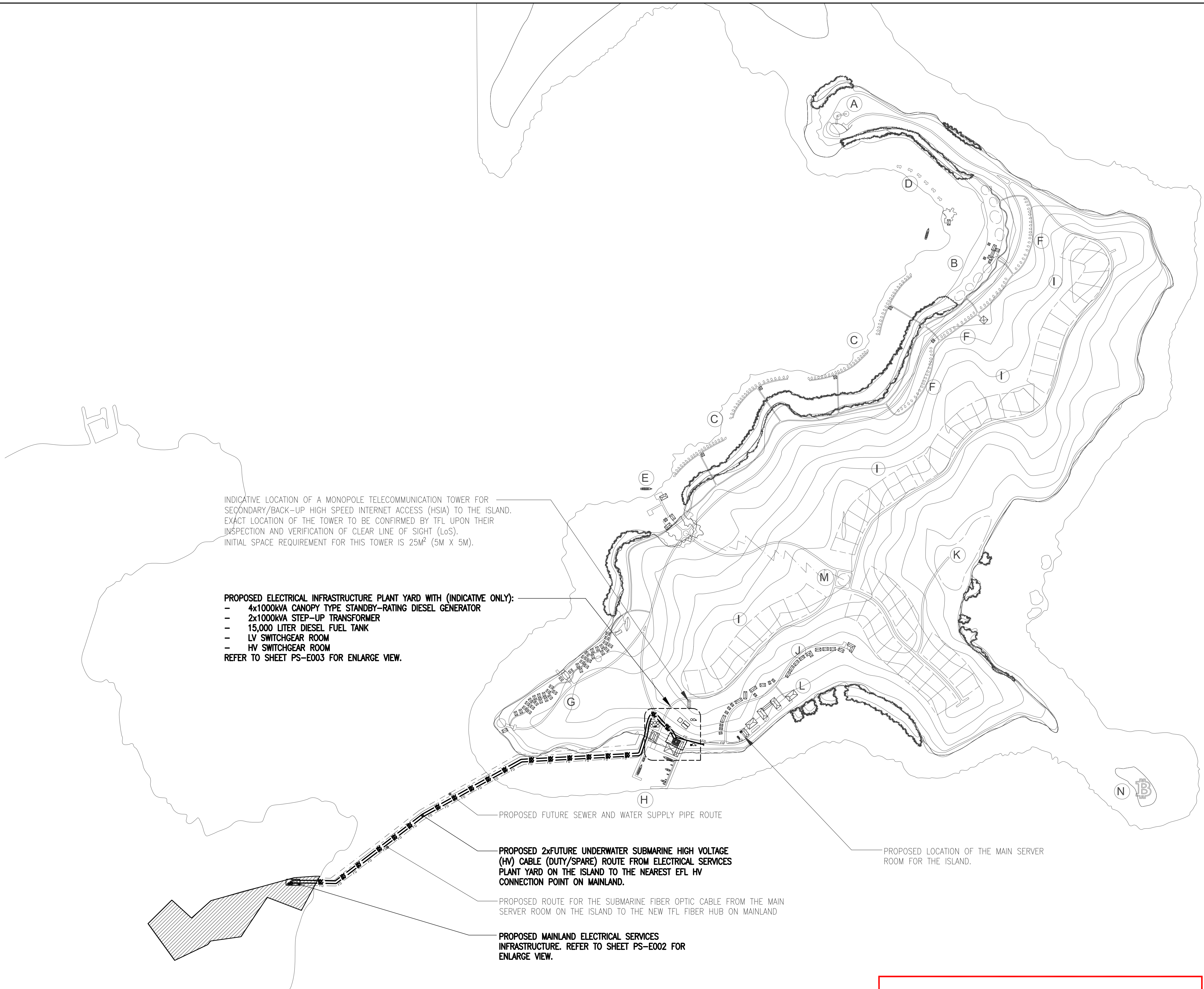
Drawing Title
ELECTRICAL SERVICES
DRAWING SCHEDULE, LEGENDS & SYMBOLS AND ABBREVIATIONS

Project Number

sheet A3

Drawing No E000

Revision No 0



PROPOSED ELECTRICAL SERVICES INFRASTRUCTURE CONNECTION TO MAIN LAND

SCALE = 1:15,000 @ A3

COORDINATION ISSUE

NOTES:

1. This drawing shall be read in conjunction with the Design Features Report.

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title

PROPOSED RESORT DEVELOPMENT

Client

Max Jubin

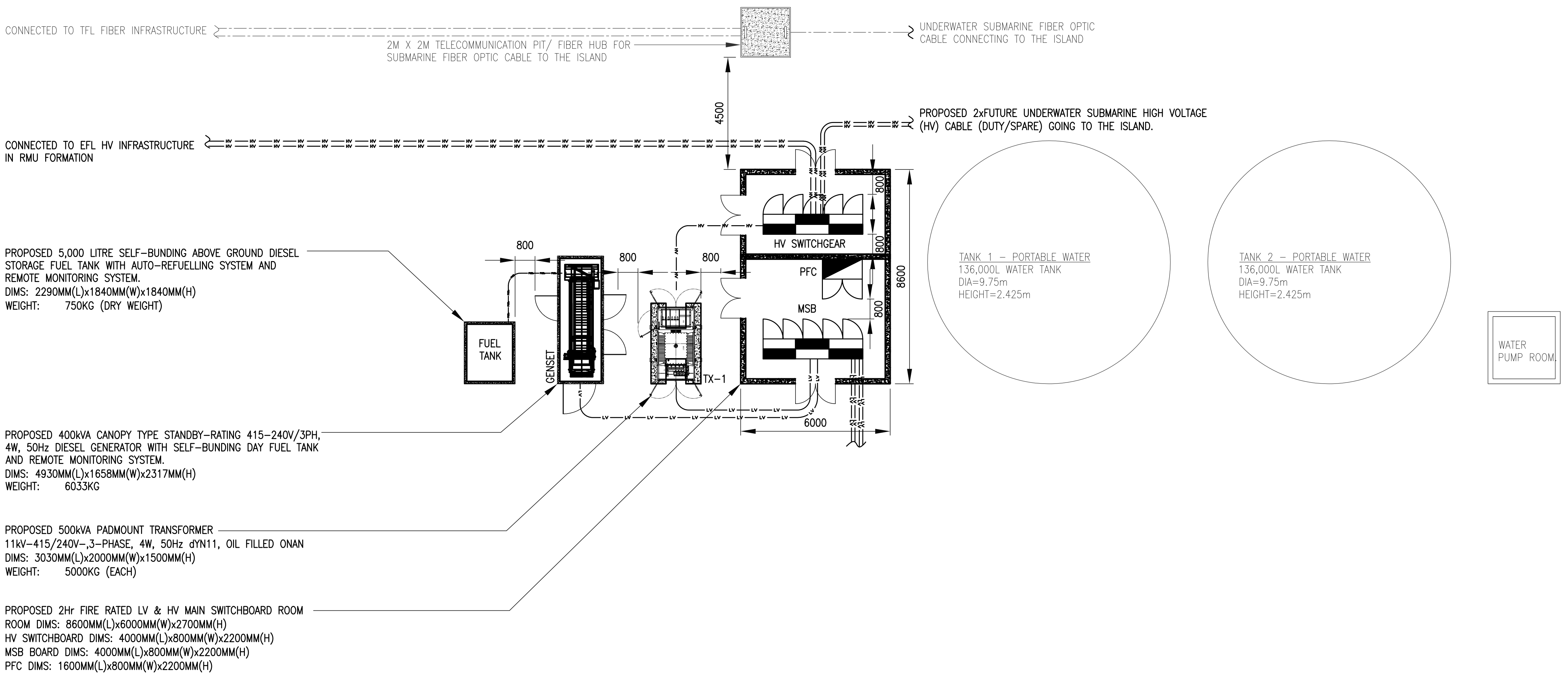
Architect

ARCHITECTS PACIFIC
Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant

Temo Consulting
Consultancy for Building Engineering & Project Management
P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI
Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

		Drawing Title
Designed	AAP	ELECTRICAL SERVICES
Drawn	AAP	PROPOSED ELECTRICAL SERVICES INFRASTRUCTURE CONNECTION TO MAIN LAND
Checked	RRC	
Approved	PAT	
Date	JUN 2021	Project Number; sheet A3
A3 Scale 1:15000	A1(1:7500) / A2(NTS)	Drawing No PS-E001; Revision No 0



PROPOSED MAINLAND ELECTRICAL INFRASTRUCTURE PLANT YARD

SCALE = 1:200 @ A3

COORDINATION ISSUE

NOTES:

1. This drawing shall be read in conjunction with the Design Features Report.

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title

PROPOSED RESORT DEVELOPMENT

Client

Max Jubin

Architect

ARCHITECTS PACIFIC
Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant

Temo Consulting

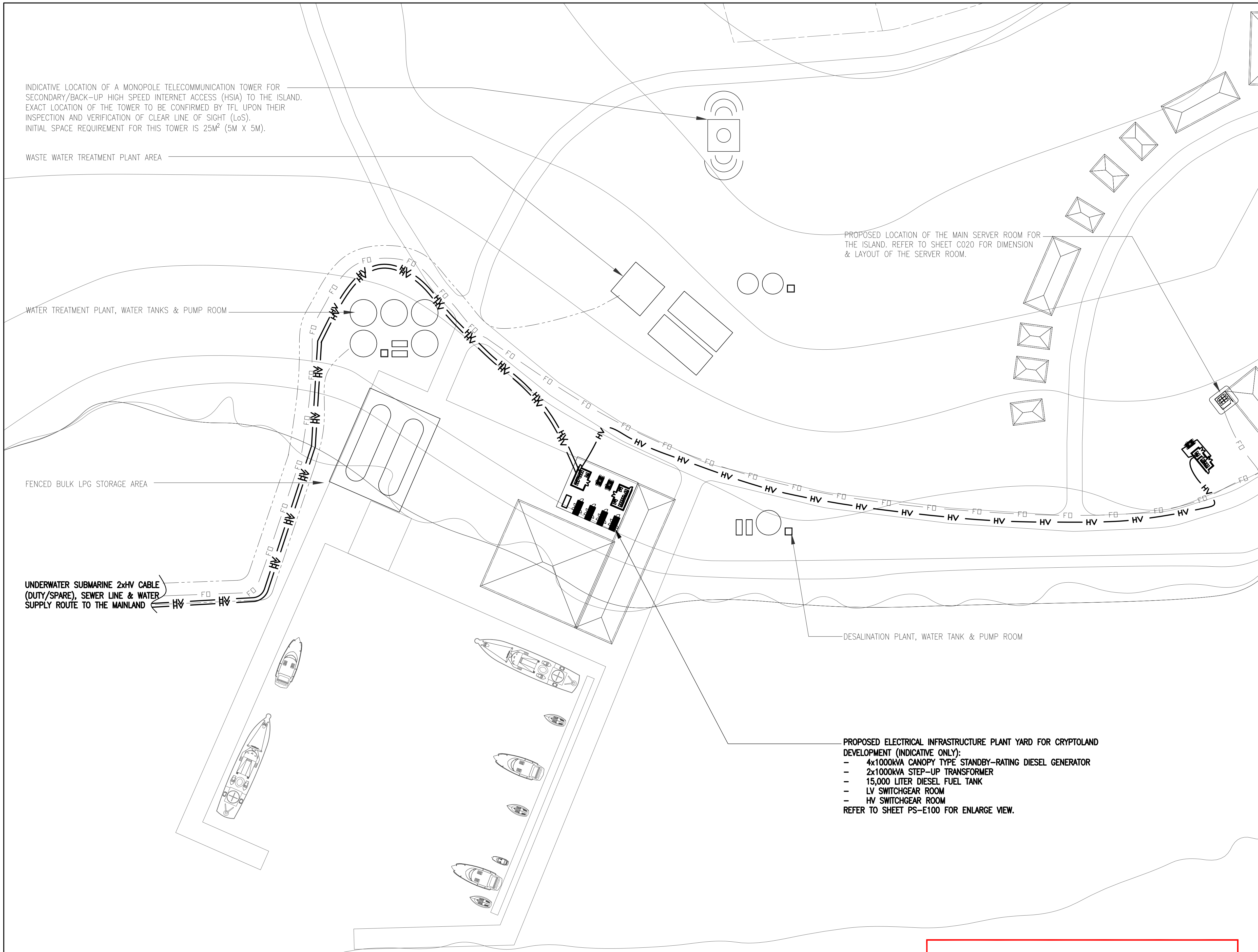
Consultancy for Building Engineering & Project Management

P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI

Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234

Email ptemo@temoconsulting.com

Designed	AAP	Drawing Title: ELECTRICAL SERVICES PROPOSED MAINLAND ELECTRICAL INFRASTRUCTURE PLANT YARD
Drawn	AAP	
Checked	RRC	
Approved	PAT	
Date	JUN 2021	Project Number; sheet A3
A3 Scale 1:200	A1(1:7500) A2(NTS)	Drawing No PS-E002; Revision No 0



PROPOSED ISLAND ELECTRICAL SERVICES INFRASTRUCTURE PLANT YARD

SCALE = 1:200 @ A3

COORDINATION ISSUE

NOTES:

1. This drawing shall be read in conjunction with the Design Features Report.

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title

PROPOSED RESORT DEVELOPMENT

Client

Max Jubin

Architect

ARCHITECTS PACIFIC

Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant

Temo Consulting

Consultancy for Building Engineering & Project Management

P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI

Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

Designed	AAP
Drawn	AAP
Checked	RRC
Approved	PAT
Date	JUN 2021
A3 Scale	1:200
A1(1:7500)	
A2(NTS)	

Drawing Title

ELECTRICAL SERVICES

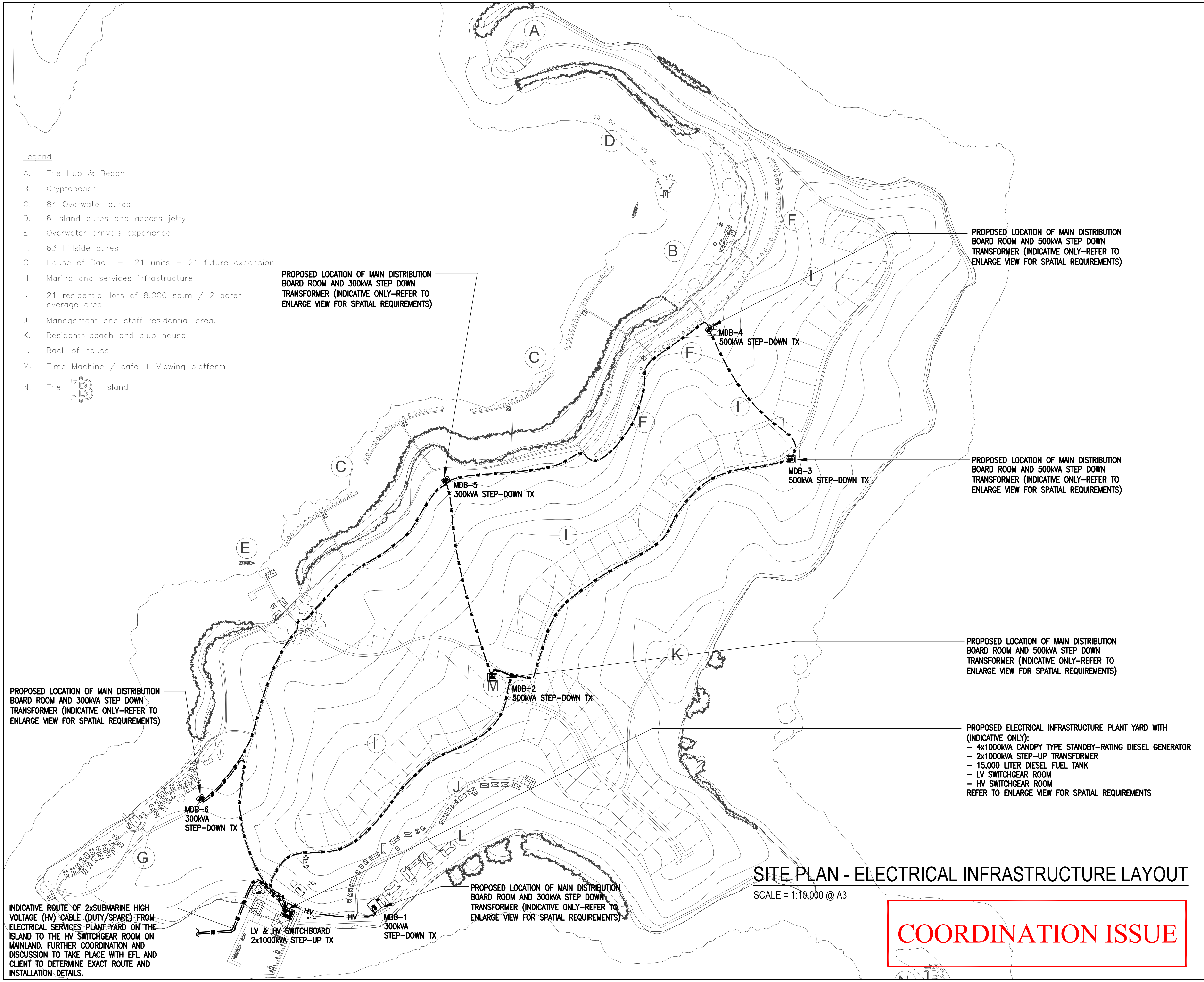
PROPOSED ISLAND ELECTRICAL SERVICES INFRASTRUCTURE PLANT YARD

Project Number

sheet A3

Drawing No PS-E002

Revision No 0



SITE PLAN - ELECTRICAL INFRASTRUCTURE LAYOUT

SCALE = 1:10,000 @ A3

Notes

1. This Drawing shall be read in conjunction with the Design Features Report.
2. The final locations of all services plant areas are subject to change upon further coordination with all parties involved.

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title

PROPOSED RESORT DEVELOPMENT

Client

Max Jubin

Architect

ARCHITECTS PACIFIC
Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant

Temo Consulting
Consultancy for Building Engineering & Project Management
P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI
Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

Designed	AAP
Drawn	AAP
Checked	RRC
Approved	PAT
Date	JUN 2021
A3 Scale	1:10000
A1(1:5000)	
A2(NTS)	

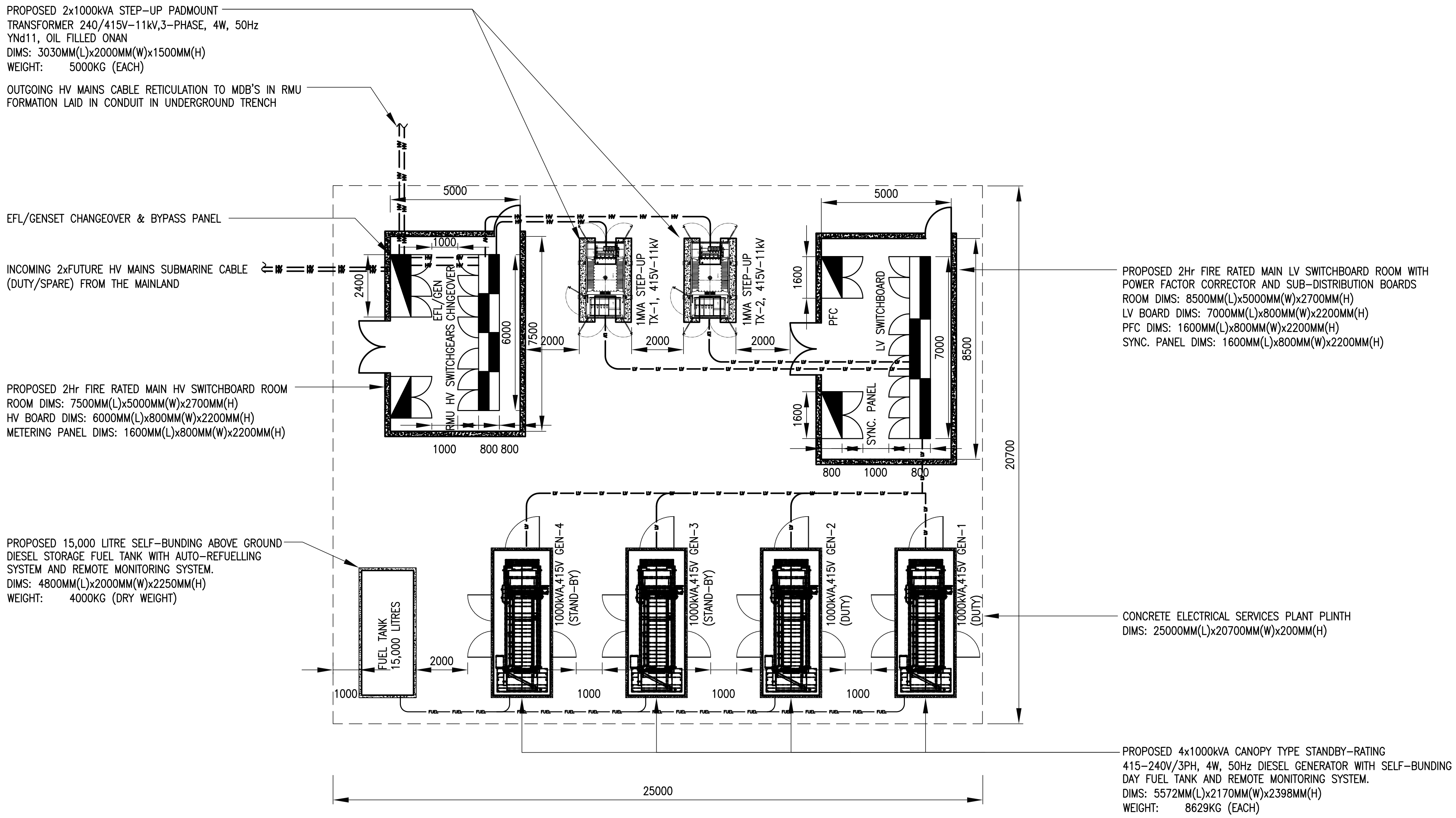
Drawing Title: ELECTRICAL SERVICES
SITE PLAN - ELECTRICAL INFRASTRUCTURE LAYOUT

Project Number:

sheet: A3

Drawing No: PS-E010

Revision No: 0



ELECTRICAL INFRASTRUCTURE PLANT YARD - ENLARGE VIEW

SCALE = 1:200 @ A3

COORDINATION ISSUE

Notes

1. This Drawing shall be read in conjunction with the Design Features Report.
2. The final locations of all services plant areas are subject to change upon further coordination with all parties involved.

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title

PROPOSED RESORT DEVELOPMENT

Client

Max Jubin

Architect

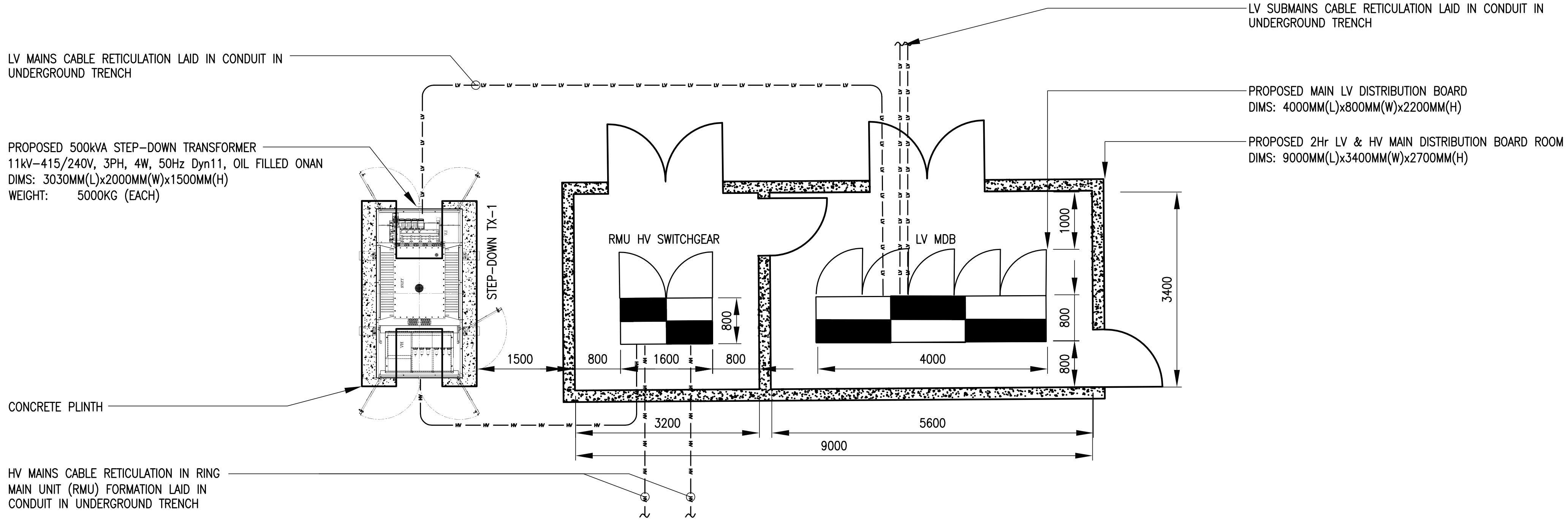
ARCHITECTS PACIFIC
Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant

Temo Consulting
Consultancy for Building Engineering & Project Management
P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI
Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

Designed	AAP	Drawing Title: ELECTRICAL SERVICES
Drawn	AAP	ELECTRICAL INFRASTRUCTURE PLANT YARD - ENLARGE VIEW
Checked	RRC	
Approved	PAT	
Date	JUN 2021	Project Number; sheet A3
A3 Scale 1:200	A1(1:100) A2(NTS)	Drawing No PS-E100; Revision No 0

Notes
1. This Drawing shall be read in conjunction with the Design Features Report.
2. The final locations of all services plant areas are subject to change upon further coordination with all parties involved.



HV SWITCHGEAR, MDB ROOM & TRANSFORMER LAYOUT - ENLARGE VIEW (TYP.)

SCALE = 1:200 @ A3

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title

PROPOSED RESORT DEVELOPMENT

Client

Max Jubin

Architect

ARCHITECTS PACIFIC
Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant

Temo Consulting
Consultancy for Building Engineering & Project Management
P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI
Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

Designed	AAP	Drawing Title: ELECTRICAL SERVICES
Drawn	AAP	HV SWITCHGEAR, MDB ROOM & TRANSFORMER LAYOUT - ENLARGE VIEW (TYP.)
Checked	RRC	
Approved	PAT	
Date: JUN 2021		Project Number / sheet: A3
A3 Scale: 1:200	A1(1:100) / A2(NTS)	Drawing No: PS-E101 / Revision No: 0

COORDINATION ISSUE

2. TELECOMMUNICATION AND DATA SERVICES

2.1 GENERAL

The Communication/ Data Services systems will comply with the following except where otherwise noted:

- Australian laws, Government and local authority Regulations.
- Telecom Fiji Limited (TFL) Standards and Requirements.
- Relevant AS/NZ Standards.
- Good engineering practice.

2.2 REFERENCE DOCUMENTS AND STANDARDS

2.2.1 Installation

AS/NZS 3080:2003:	Integrated Telecommunications Cabling for Commercial Premises
AS/NZS 3084:2003	Telecommunications and Pathways for Commercial Buildings (Mandatory Requirements)
AS/NZS 3085.1:2004:	Administration of Communications Cabling Systems: Basic Requirements
ISO/IEC 11801:2002:	Information Technology - Generic cabling for customer premises

2.2.2 Materials and Performance

AS/NZS 3080:2003;	Integrated Telecommunications Cabling for Commercial Premises (Note: references in this Specification to cable categories are for information only. Compliance will be assessed to this standard.)
AS/NZS 3084:2003:	Telecommunications and Pathways for Commercial Buildings (Mandatory Requirements only)
AS/NZS 3085.1:2004:	Administration of Communications Cabling Systems: Basic Requirements
ISO/IEC 11801:2002:	Information Technology - Generic cabling for customer premises

2.2.3 Testing

SAA/SNZ HB27:	Handbook for testing Backbone Cable installations
AS/NZS 3087.1:2003:	Telecommunications Installations - Generic cabling systems - specification for the testing of balanced communications cabling in accordance with values set in AS/NZS 3080:2003

2.3 INCOMING TELECOMMUNICATION INFRASTRUCTURE CABLE

The Island will be provisioned with a new and dedicated telecommunication infrastructure as there is no telecommunication services available on the Island.

A new submarine fiber optic cable/link will be laid from the existing Telecom Fiji Limited (TFL) infrastructure on the mainland to Nananu-i-Cake Island. These works will be undertaken by TFL in conjunction with their overseas partners. The same fiber optic cable will have the capacity to support other Internet Service Providers (ISP's) like Vodafone Fiji Ltd (VFL) and Digicel Fiji Ltd (DFL). This fiber link will be the primary source of telecommunication services to the island.

As a secondary/backup source of telecommunication services to the island, a microwave link will be provisioned from the mainland. A new 15-20 meters monopole tower will be constructed on the Island which shall accommodate the RF base stations of the different ISP's in Fiji; namely Telecom Fiji Ltd (TFL), Vodafone Fiji Ltd (VFL) and Digicel Fiji Ltd (DFL).

The two forms of telecommunication links to the Island; submarine fiber optic cable (primary) and microwave (secondary) will be terminated and configured at the main Server Room on the Island. Multiple fiber optic links will then be further deployed throughout the Island to provide the necessary data/voice services.

2.4 STRUCTURED CABLING SYSTEM AND IT INFRASTRUCTURE.

2.4.1 General

Generally, the IT infrastructure will comprise a structured cabling system in accordance with AS/NZS 3080 unless specifically accepted.

There will be a central server/ communications room and this will be sized to house the following:

a) The central equipment for the development as outlined below:

i. Structured Cabling System Campus distributors suitable for Cat6 (copper) and fiber optic cable deployment.

ii. PABX and associated systems e.g., call accounting, call processing

iii. MATV and Pay Per View (PPV) head-end equipment

iv. High Speed Internet Access (HSIA) equipment

v. LAN equipment

vi. Property Based Systems (PBS) Servers

vii. Hotel Guest Card Access System (HGCAS) Server

viii. CCTV System head-end equipment

ix. Access Control System head-end equipment

x. Workstations

b) Infrastructure equipment required for High-Speed Internet services.

The Server Room will have a duty/ stand by air conditioning system and a UPS unit for the critical components of the IT Systems.

2.4.2 PABX System

The resort operator will select a PABX system which will be provided by a specialist sub-contractor. The PABX system will be located in the server room. The PABX system will consist of the following components and features as a minimum:

- PABX Telecommunications Switch
- Call Accounting System
- Voice Mail System
- Communications infrastructure and cabling
- Voice type End User equipment – handsets and consoles
- Connection to Property Management System
- Connection to Point of Sale
- Security System Integration

The system shall be sized to cater for a separate telecom Direct Inward Dial (DID) line for areas that require such features such as separately tenanted retail spaces (if any). The call accounting system will provide separate billing for all areas including the guestrooms.

2.4.3 Computer and POS System

The resort operator will provide the computer systems via a specialist supplier/contractor. The cabling infrastructure will be provided as described above.

2.4.4 Hotel Management Systems

The resort operator will provide the computer systems via a specialist supplier/contractor. The cabling infrastructure will be provided as described above.

2.5 ACCESS CONTROL & CCTV SYSTEM

Access Control & CCTV Systems will be provided to selected areas in accordance with the resort operator's requirements.

The access control system will typically consist of the following components and features:

- Central Controller Module linked to PABX System
- Biometric or RFID access-controlled doors
- Magnetic door locks.
- CCTV (using IP cameras) – for public areas

The Access Control & CCTV System will be discreet, unobtrusive and low-key, suited for a resort environment. CCTV cameras will be deployed at entrances and exits, reception & other public spaces as well as all point-of sale (POS) locations.

The system is not expected to be actively monitored; hence cameras will be fixed rather than steerable, and recording will be automated on Network Video Recorders with a minimum of 3-months storage HDD's. CCTV Monitors will be provided in the Server Room or any other office space as directed by the resort operator.

Typically, entrance to sensitive areas such as the Server/ Communications Room and areas where high value stock is held such as liquor stores, will be access controlled, and may have intruder detection system fitted.

2.5.1 Access Control System to Guestrooms

Electronic door locks for all guestroom access control and door monitoring will be from an approved vendor.

2.6 MATV SYSTEM

An MATV system will be provided consisting of Satellite, UHF, VHF antenna, receiver, modulator, demodulator, amplifier and other associated Head End equipment by 3rd Party for in-house entertainment channels. The MATV reticulation system from head end unit to all areas will be on fiber optic cabling.

Considering the guest rooms for e.g., the fiber optic cables from the respective Communication Rooms will terminate at an access point within the guest room which will provide the necessary bandwidth for the data/ voice requirement. The access point module will further distribute the signals for MATV & telephone over a cat6 (copper) cabling network. With this set-up, guests will have access to HSIA and voice connectivity.

Generally, the MATV distribution system will consist of fiber optic and Cat6 cables. TV channels, in-house video, FM radio, internet and other composite video signals will be modulated on a distinct carrier digital signal and transmitted on the MATV distribution network to be displayed on the Televisions (Smart TV). The MATV system will be designed, supplied and installed by a 3rd Party specialist manufacturer/contractor.

The MATV based system described above is a modular system that can optionally cater for satellite TV and other RF sources. The addition of sync generator outputs from a server computer can be modulated on the same IP distribution system. In this way hotel information systems and the Internet can be added to the MATV system Network.

2.7 WI-FI SYSTEM

The Wi-Fi system will provide full blanket Radio Frequency coverage for the entire resort. The Wi-Fi system shall consist of the fiber optic and Cat6 cabling, Access Point modules, Bridge/Repeaters, Client Bridge, POE (Power Over Ethernet) switches, Routers and Servers.

A Wi-Fi-enabled device can connect to the Internet when within range of a wireless network which is configured to permit this. The coverage of one or more (interconnected) access points called hotspots can extend from an area as small as a few rooms to as large as the entire site.

Coverage in the larger area may require a group of access points with overlapping coverage.

Routers that incorporate a digital subscriber line modem or a cable modem and a Wi-Fi access point, provide Internet access and internetworking to all devices connected to them, wirelessly or via cable. Wi-Fi structured cabling shall be part of communication contract and the Wi-Fi system, software’s and associated equipment shall be by a third-Party contractor.

2.8 BACKGROUND MUSIC SYSTEM

The Background Music system (BGM) system will have centrally located source players, amplifiers, mixers etc. with a distribution network to individual zones and areas within those zones. Within each zone speakers and sound controllers will be provided.

Music can be provided from a number of sources such as CD Banks, FM Tuners, and USB Ports. These sources will be connected to pre-amplifier units and then to mixer/power amplifier modules. Call stations consisting of desktop type microphone stands and additional speaker ports can be provided at various permanent locations or wireless handheld sets operating on VHF-L or H bands. Critical alarm information such as that from fire alarm systems can be used to trigger pre-recorded messages broadcast on the system as per program specification. The mixer unit will interface to various audio sources and output to the amplification and control system.

A digitally matrix pre-amplifier will be used with independent audio input channel. One of these channel inputs can be programmed for paging inputs. The pre-amplifier will provide for automatic switching of input based on input activity. The amplifier will also allow priority assignment on inputs. The pre-amplifier will provide automatic feed of audio source after a microphone page or when switching to a lower priority input. The paging over music level will be adjustable.

The amplifier will have a defeat able sleep mode that greatly reduces idle power consumption when the amplifier has not received audio for more than 3 minutes. The amplifier will also include a clip-limiting feature that automatically reduces signal clipping. The amplifier shall be protected against over-currents, overloads, excessive thermal dissipation, DC voltage, and short circuit on the outputs.

Loudspeakers will be cone-type units, having a frequency response of at least 190Hz to 20 kHz and a power handling capacity of 7W, minimum. A transformer, capable of matching an 8-ohm loudspeaker to a 25-volt or 70-volt line, and providing power taps of 4, 2, 1, 1/2, 1/4, and 1/8 watts shall be included.

BGM for public areas will be centrally controlled and will have speakers, microphones and sound controllers within each zone.

2.9 AUDIO VISUAL

Specialist Audio-visual systems will be deployed in selected areas (if required).

AV system will generally consist of the following:

- AV Equipment: In house sound system, microphone system, DVD, computer interface to AV equipment, motorized projection screens.
- Provision of a centrally-controlled sound system based on a Peavey Media Matrix or similar. Each zone will have the facility for local volume control and programme input. The use of local programme in each zone will be controllable from the central matrix, to provide for the eventuality of discipline issues with local programme material.
- Integrated AV cabling to wall plates at specified locations to facilitate system set up and configuration
- The AV system will be designed supplied and installed by a specialist AV contractor.

2.10 RESORT IT SYSTEMS

Resort IT systems including all relevant software will be provided by the Resort Operator.

2.11 COMMUNICATION SERVICES DRAWINGS

Communication Services Drawings

DRAWING SCHEDULE

DWG. No.	DETAILS	REV	DATE
PS-C000	Drawing Schedule, Legends & Symbols & Abbreviations	0	21JUN21
PS-C010	Proposed Submarine Fiber Optic Connection to Mainland	0	21JUN21
PS-C011	Proposed Mainland Services Infrastructure Plant Yard	0	21JUN21
PS-C012	Proposed Island Services Infrastructure Plant Yard	0	21JUN21
PS-C013	Site - Telecommunication Infrastructure Layout	0	21JUN21
PS-C014	Typical Communications Room & Main Server Room Layout	0	21JUN21

ABBREVIATIONS

TFL - Telecom Fiji Limited
VFL - Vodafone Fiji Limited
DFL - Digicel Fiji Limited
CR - Communications Room
ISP - Internet Service Provider
HSIA - High Speed Internet Access

LEGENDS & SYMBOLS

Fiber Optic Cable

Monopole Telecommunication Tower

GENERAL NOTES:

1. PRIMARY SOURCE OF TELECOMMUNICATION SERVICES TO THE ISLAND SHALL BE VIA SUBMARINE FIBER OPTIC CABLE FROM THE MAINLAND.
2. LAYING OF THE SUBMARINE FIBER OPTIC CABLE TO BE CARRIED OUT BY TFL IN CONJUNCTION WITH THEIR OVERSEAS PARTNERS.
3. THE SUBMARINE FIBER OPTIC CABLE WILL HAVE THE CAPACITY TO SUPPORT OTHER INTERNET SERVICE PROVIDERS LIKE VFL & DFL.
4. SECONDARY OR BACK-UP SOURCE OF TELECOMMUNICATION SERVICES TO THE ISLAND SHALL BE VIA MICROWAVE LINK FROM THE MAINLAND. A MONOPOLE TOWER WILL ACCOMMODATE THE RF BASE STATIONS FOR THE THREE INTERNET SERVICE PROVIDERS (TFL, VFL & DFL).
5. FIBER OPTIC CABLE WILL BE DEPLOYED TO ALL AREAS INCLUDING GUEST ROOMS FOR HSIA AND VOICE CONNECTIVITY.

COORDINATION ISSUE

Notes

1. This Drawing shall be read in conjunction with the Design Features Report.
2. The final locations of all services plant areas are subject to change upon further coordination with all parties involved.
3. Further investigation to be carried out with the local telecommunication service providers.

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title
PROPOSED RESORT DEVELOPMENT

Client
Max Jubin

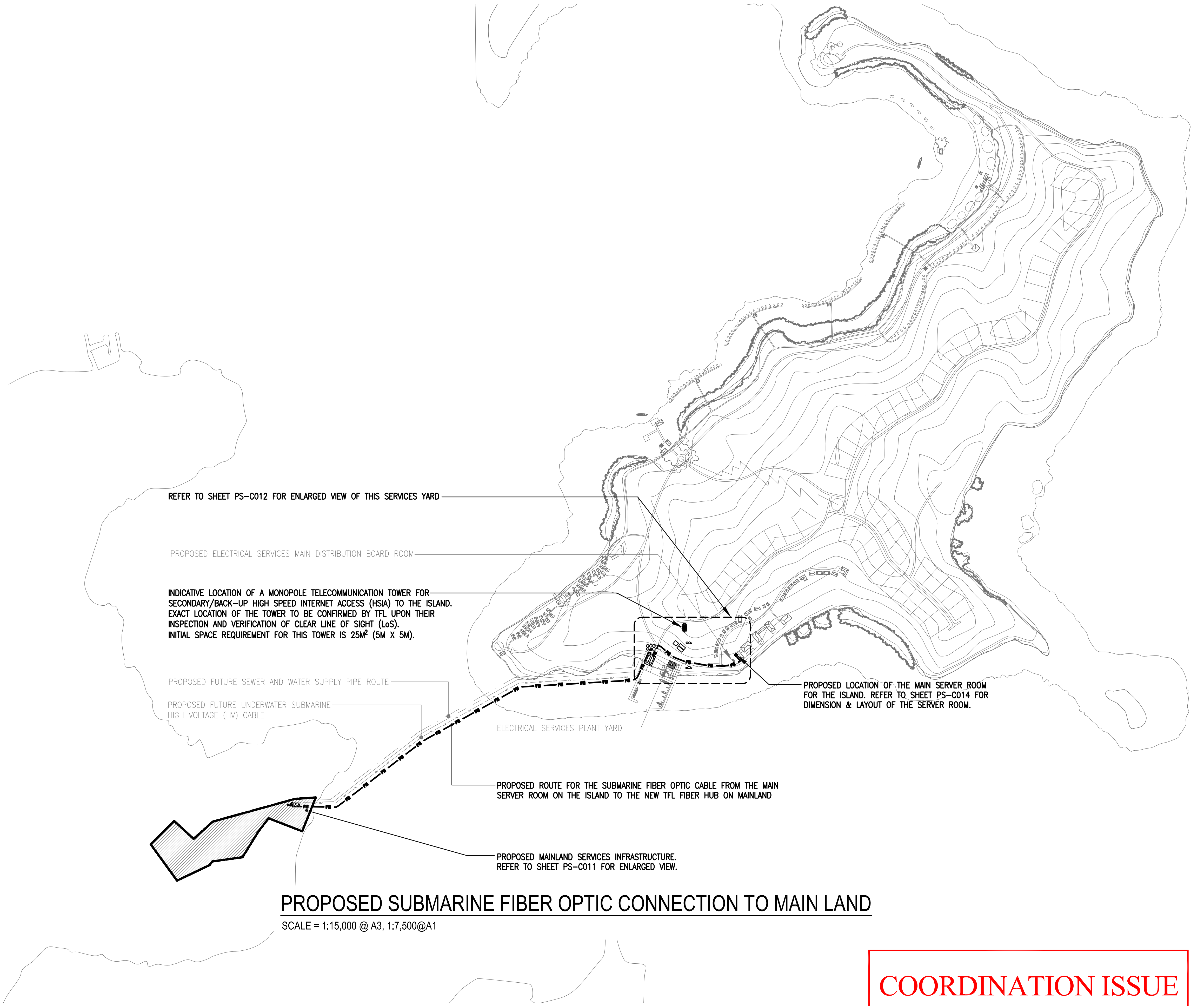
Architect
ARCHITECTS PACIFIC
Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant
Temo Consulting
Consultancy for Building Engineering & Project Management
P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI
Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

Designed	CSP
Drawn	CSP
Checked	RRC
Approved	PAT
Date	JUN 2021
A3 Scale	NTS
A1(NTS)	
A2(NTS)	

Drawing Title
COMMUNICATION SERVICES
DRAWING SCHEDULE, LEGENDS & SYMOLS & ABBREVIATIONS

Project Number
sheet A3
Drawing No PS-C000
Revision No 0



PROPOSED SUBMARINE FIBER OPTIC CONNECTION TO MAIN LAND

SCALE = 1:15,000 @ A3, 1:7,500@A1

COORDINATION ISSUE

Notes

1. This Drawing shall be read in conjunction with the Design Features Report.
2. The final locations of all services plant areas are subject to change upon further coordination with all parties involved.
3. Further investigation to be carried out with the local telecommunication service providers.

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title

PROPOSED RESORT DEVELOPMENT

Client

Max Jubin

Architect

ARCHITECTS PACIFIC
Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

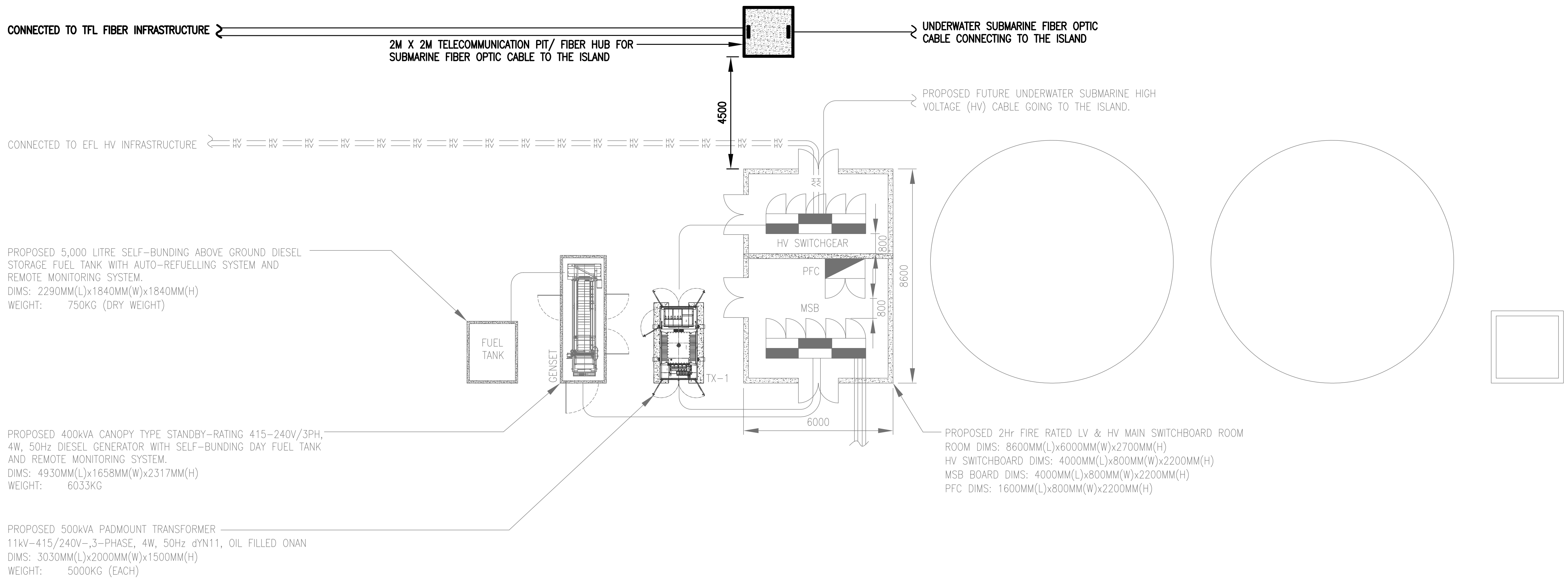
Engineering Consultant

Temo Consulting
Consultancy for Building Engineering & Project Management
P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI
Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

Designed	CSP
Drawn	CSP
Checked	RRC
Approved	PAT
Date	JUN 2021
A3 Scale	1:15000
A1(1:7500)	
A2(NTS)	

Drawing Title
COMMUNICATION SERVICES
PROPOSED SUBMARINE FIBER OPTIC CONNECTION TO MAINLAND

Project Number
sheet A3
Drawing No PS-C010
Revision No 0



PROPOSED MAINLAND SERVICES INFRASTRUCTURE PLANT YARD

SCALE = 1:200 @ A3, 1:100@A1

COORDINATION ISSUE

Notes

1. This Drawing shall be read in conjunction with the Design Features Report.
2. The final locations of all services plant areas are subject to change upon further coordination with all parties involved.
3. Further investigation to be carried out with the local telecommunication service providers.

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title

PROPOSED RESORT DEVELOPMENT

Client

Max Jubin

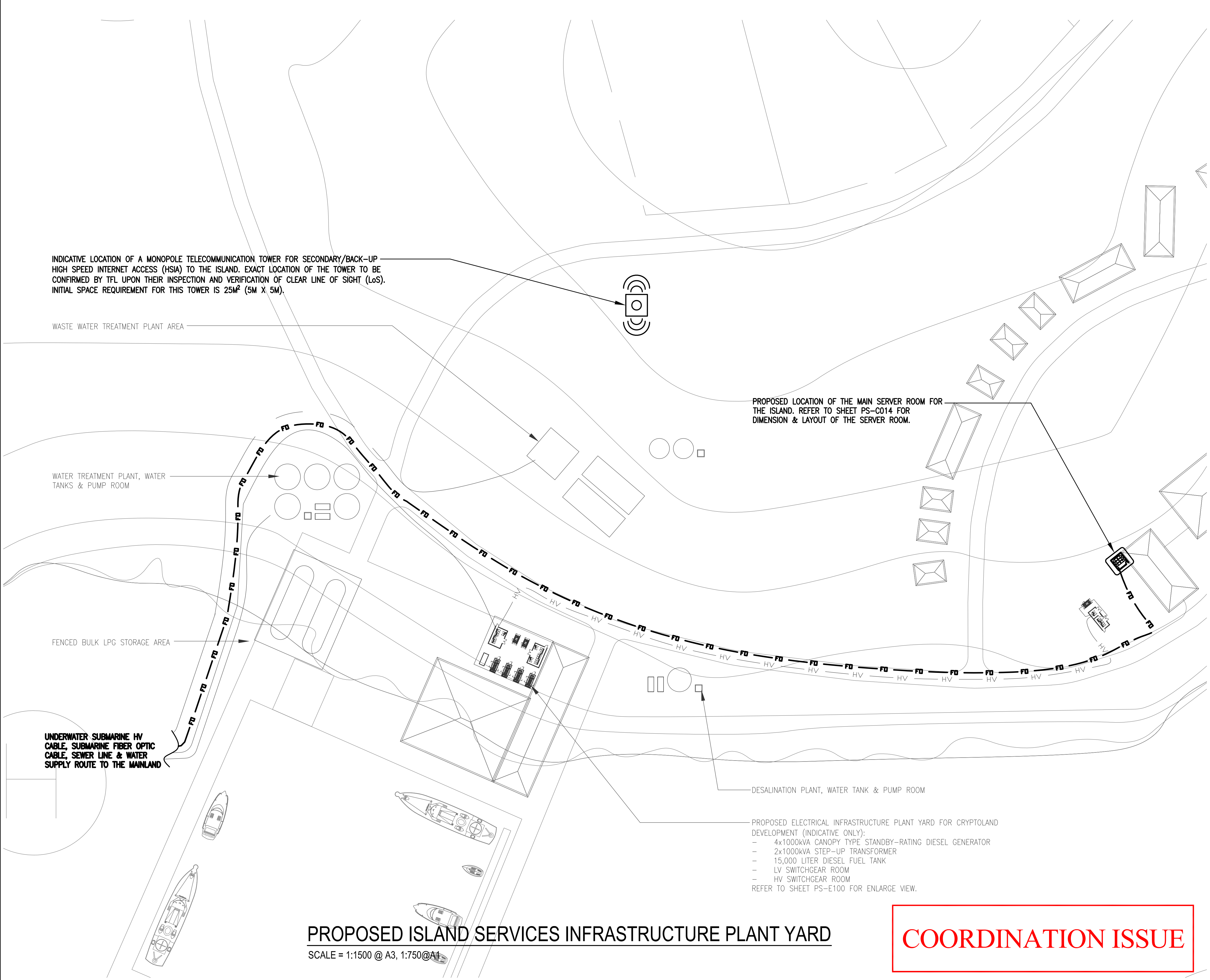
Architect

ARCHITECTS PACIFIC
Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant

Temo Consulting
Consultancy for Building Engineering & Project Management
P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI
Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

Designed	CSP	Drawing Title: COMMUNICATION SERVICES — PROPOSED MAINLAND SERVICES INFRASTRUCTURE PLANT YARD
Drawn	CSP	
Checked	RRC	
Approved	PAT	
Date	JUN 2021	Project Number
A3 Scale 1:200	A1(1:100) / A2(NTS)	sheet A3
		Drawing No PS-C011 — Revision No 0



PROPOSED ISLAND SERVICES INFRASTRUCTURE PLANT YARD

SCALE = 1:1500 @ A3, 1:750@A1

COORDINATION ISSUE

Notes

1. This Drawing shall be read in conjunction with the Design Features Report.
2. The final locations of all services plant areas are subject to change upon further coordination with all parties involved.
3. Further investigation to be carried out with the local telecommunication service providers.

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title

PROPOSED RESORT DEVELOPMENT

Client

Max Jubin

Architect

ARCHITECTS PACIFIC
Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant

Temo Consulting
Consultancy for Building Engineering & Project Management
P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI
Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

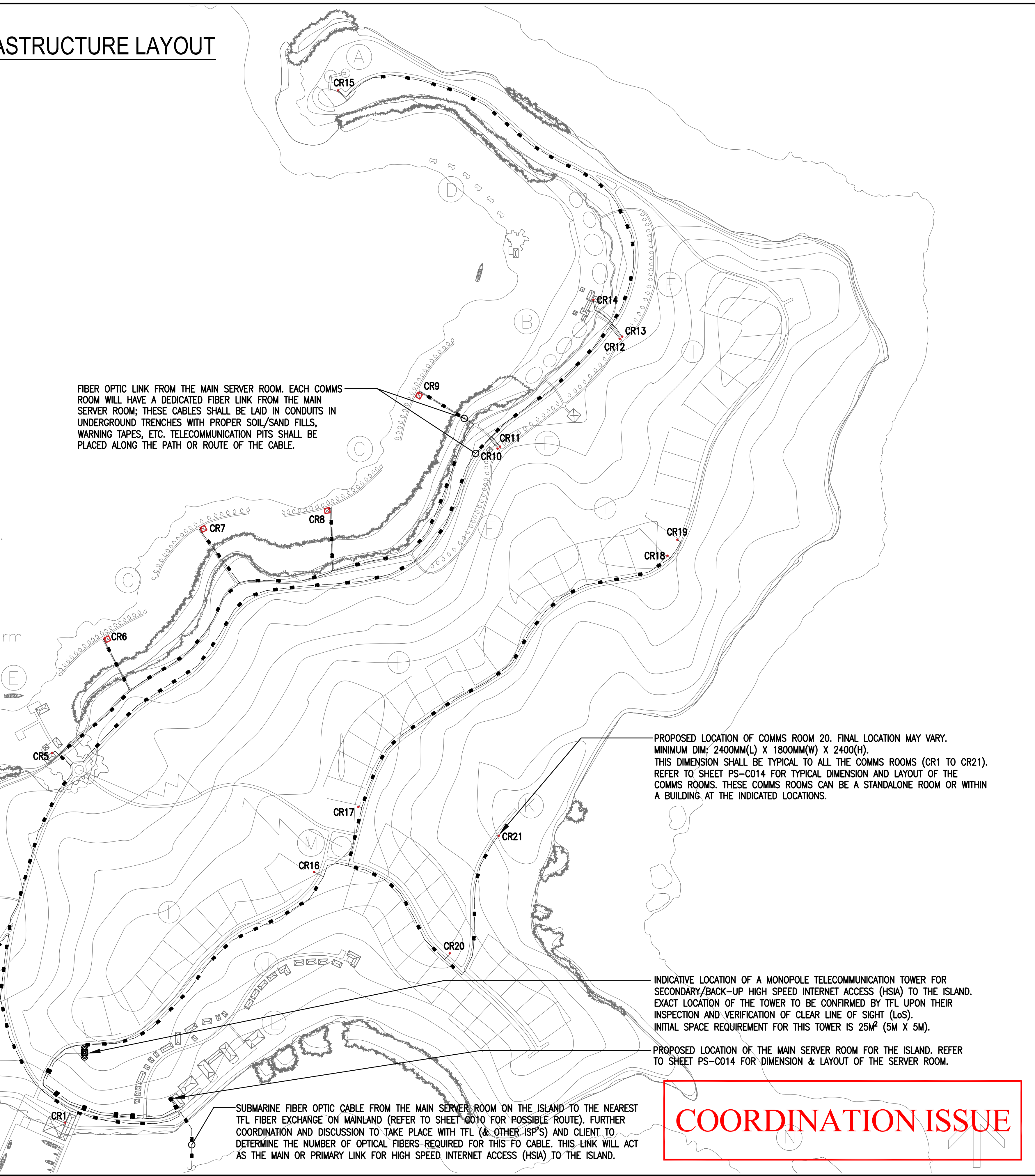
Designed	CSP	Drawing Title
Drawn	CSP	COMMUNICATION SERVICES
Checked	RRC	PROPOSED ISLAND SERVICES INFRASTRUCTURE PLANT YARD
Approved	PAT	
Date	JUN 2021	Project Number; sheet A3
A3 Scale 1:1500	A1(1:750) A2(NTS)	Drawing No PS-C012; Revision No 0

SITE - TELECOMMUNICATION INFRASTRUCTURE LAYOUT

SCALE = 1:10,000@A3, 1:5,000@A1

Legend

A. The Hub & Beach
B. Cryptobeach
C. 84 Overwater bures
D. 6 island bures and access jetty
E. Overwater arrivals experience
F. 63 Hillside bures
G. House of Dao – 21 units + 21 future expansion
H. Marina and services infrastructure
I. 21 residential lots of 8,000 sq.m / 2 acres average area
J. Management and staff residential area.
K. Residents' beach and club house
L. Back of house
M. Time Machine / cafe + Viewing platform
N. The B Island



COORDINATION ISSUE

Notes

1. This Drawing shall be read in conjunction with the Design Features Report.
2. The final locations of all services plant areas are subject to change upon further coordination with all parties involved.
3. Further investigation to be carried out with the local telecommunication service providers.

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title

PROPOSED RESORT DEVELOPMENT

Client

Max Jubin

Architect

ARCHITECTS PACIFIC
Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant

Temo Consulting
Consultancy for Building Engineering & Project Management
P.A.T Consulting Limited, 16 Gorrie St, Level 3, Tuvalu House, PO Box 16567, Suva, FIJI
Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

Designed	CSP
Drawn	CSP
Checked	RRC
Approved	PAT
Date	JUN 2021
A3 Scale	1:10000
A1(1:5000)	
A2(NTS)	

Drawing Title: COMMUNICATION SERVICES – SITE - TELECOMMUNICATION INFRASTRUCTURE LAYOUT

Project Number:

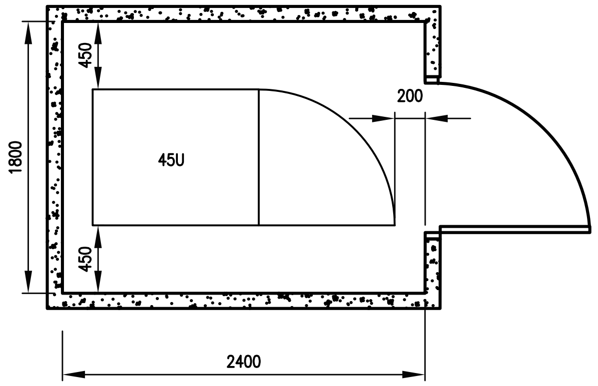
sheet: A3

Drawing No: PS-C013

Revision No: 0

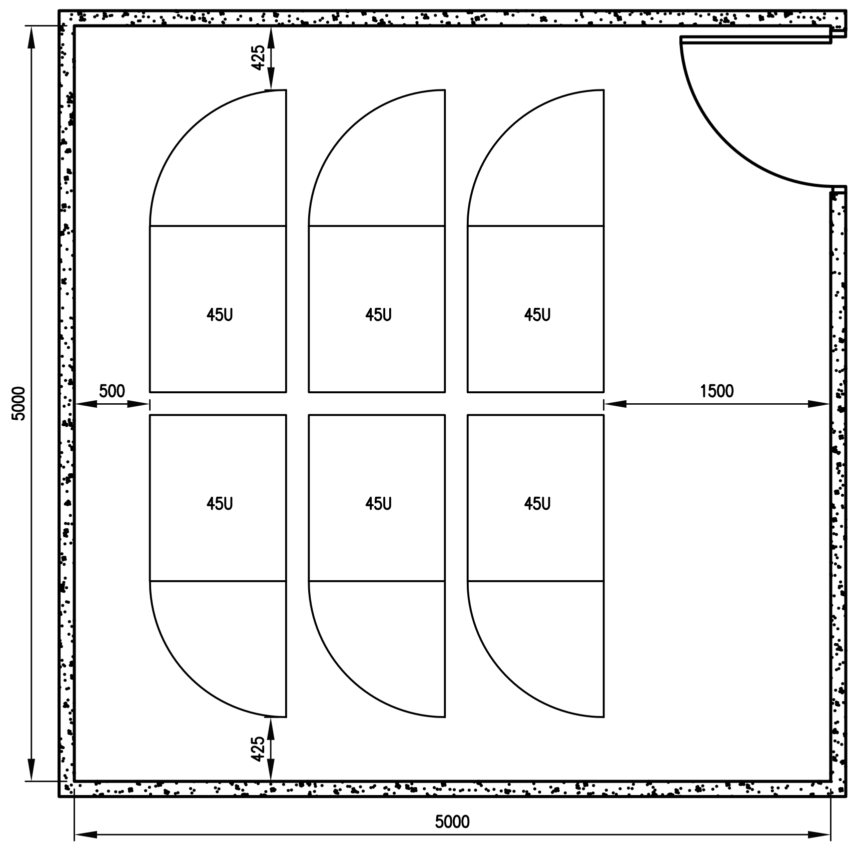
Notes

1. This Drawing shall be read in conjunction with the Design Features Report.
2. The final locations of all services plant areas are subject to change upon further coordination with all parties involved.
3. Further investigation to be carried out with the local telecommunication service providers.



TYPICAL COMMUNICATIONS ROOM LAYOUT (CR1 - CR21)

SCALE = 1:50@A3, 1:25@A1



MAIN SERVER ROOM LAYOUT

SCALE = 1:50@A3, 1:25@A1

COORDINATION ISSUE

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title

PROPOSED RESORT DEVELOPMENT

Client

Max Jubin

Architect

ARCHITECTS PACIFIC
Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant

Temo Consulting
Consultancy for Building Engineering & Project Management
P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI
Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

Designed	CSP
Drawn	CSP
Checked	RRC
Approved	PAT
Date	JUN 2021
A3 Scale	1:50
A1(1:25)	
A2(NTS)	

Drawing Title
COMMUNICATION SERVICES
TYPICAL COMMUNICATIONS ROOM & MAIN SERVER ROOM LAYOUT

Project Number

sheet A3

Drawing No PS-C014

Revision No 0

3. HYDRAULICS SERVICES

3.1 GENERAL

The Hydraulic Services infrastructure consists of the treatment and distribution of domestic cold water supply and sanitary drainage systems up to and including the Waste Water Treatment Plant (WWTP).

All work will be designed and installed to comply with the requirements of all relevant Authorities and Standards. This includes the following:

3.1.1 Reference Documents and Standards

Local Water & Health Authorities Requirements

NBCF	National Building Code of Fiji
AS/NZS 3500	Plumbing and Drainage Code
AS 1432	Copper tubes of water, gas and sanitation
AS 1585	Capillary and brazing fittings for copper and copper alloys
AS 2129	Flanges for pipes, valves and fittings
AS 3000	SAA wiring rules
AS/NZS 1596	The storage and handling of LP Gas
AS/NZS 5601	Gas Installations
NZS 4219	Seismic resistance of engineering systems in buildings

3.2 EXTENT OF WORKS

a) Installation of Desalination plants

b) Installation of water storage tanks for the different stages of water collection, treatment and storage as indicated on the drawings.

c) Installation of main water supply pipe work from primary tanks to secondary tanks and distribution to all areas.

d) Installation of sewer pumping stations and pressurised distribution pipework system up to the Waste Water Treatment Plant (WWTP).

e) Installation of manholes and gravity system pipework.

f) Installation of WWTP (including the collection of the treated effluent to be used for irrigation).

g) Laying of undersea waste water and potable water pipework from the island to the mainland for future connection to Water Authority of Fiji (WAF) infrastructure.

3.3 SYSTEMS DESCRIPTION

3.3.1 DOMESTIC COLD WATER

The main source of water on the island will be from sea water collection. The sea water will be pre-treated via desalination plant. The pre-treated water will then be transferred to the Primary storage tanks where the water will be treated via a containerised Water Treatment Plant (WTP) before being distributed to the secondary holding tanks. Water will be distributed to the whole island from the secondary tanks. The lots along the ridge of the island will be fed by a pumped pressurised water supply distribution network and the Resorts down close to the beach and over water will be fed via a pressurised gravity water supply distribution network.

3.3.2 SANITARY PLUMBING

All waste from the resorts shall discharge into the main sewer pumping stations via a gravity drainage system. The lots along the ridge of the island will discharge into a gravity drainage system that flows into the one main sewer pumping stations and WWTP. Each main sewer pumping station is connected in series and finally discharging into the sewer collection chamber before being fed into the WWTP for treatment. The treated effluent is collected for irrigation. The irrigation piping network is a separate system that is distributed to different areas of the island that require irrigation.

3.3.3 WASTE WATER AND POTABLE WATER CONNECTION TO MAINLAND

It is anticipated that the future potable water and waste water connections be made from the mainland to the Island via underwater pipework when the capacity is available from the WAF infrastructure.

Dedicated holding tanks and pumprooms will need to be provided on the Mainland for the transition to the WAF infrastructure. The pipework shall be installed by specialist contractors who will submit details to WAF and the consultant for approval.

3.4 EQUIPMENT

3.4.1 DOMESTIC WATER PIPEWORK

All cold water pipe work from Ø32 up to Ø100mm, shall be random copolymer Polypropylene (PP-R) complying with EN ISO 15494, DIN 8078 & DIN 8077.

Larger pipes shall be High-Density Polyethylene (HDPE) pipes and associated fittings shall comply with AS-NZS 4130 & 4131.

All these potable water pipes, accessories and fittings shall be tested in accordance with AS-NZS 4020. Pipe work will be reticulated clear of water sensitive areas.

3.4.2 DESALINATION PLANT

Salt water collected will run through the desalination plant based on reverse osmosis process available for seawater or high salinity brackish water. The Pre-treated water shall be pumped to the WTP to be further treated before being distributed to the island for use.

3.4.3 WATER TREATMENT PLANT (WTP)

The WTP shall be capable of treating the pre-treated water from the desalination plant to meet Water Authority of Fiji's requirements and ready for human consumption.

The WTP shall contain a multiple stage filtration process to remove particles and have a programmed automatic dosing system.

3.4.4 SANITARY DRAINAGE PIPEWORK

All pressurised sanitary pipework shall be High-Density Polyethylene (HDPE) pipes and associated fittings. All gravity pipework shall be uPVC or PVC.

3.4.5 WASTE WATER TREATMENT PLANT

All works necessary to provide a fully functional and compliant system as detailed in this specification and drawings shall be carried out. These works shall include any minor works and/or materials not explicitly stated but necessary to implement the services required.

The Works comprise the complete Sewage Treatment Systems including, but not limited to:

i) Waste water treatment plant (WWTP) including inlet screen and screenings press, equalisation, transfer pumps, aeration systems including blowers and pipework, denitrification, clarifiers, chemical dosing, chlorination system with discharge effluent pumps & etc.

ii) Sludge handling system including dewatering press.

iii) Sewerage pumping station and associated pumps and fittings.

The Hydraulics-WWTP Sub-Contractor shall make allowance in terms of cost and time for all necessary equipment and materials required to implement this specification whether or not explicitly stated and whether or not permanently installed upon completion. These items shall include but not be limited to hiring of equipment, fastening materials, minor building works such as penetrations for cables and support systems.

Supply all materials, labour cartage, tools, plant and equipment necessary for the completion, testing, commissioning and certification of the sanitary plumbing and drainage systems described in this specification.

Where specific plant, systems, equipment and pipework materials are described in this specification, Contractors shall base their Contract on these specific requirements. Where no specific requirements are described, the Contractor shall install systems, which comply with the standards described in these documents.

The Sub-contractor shall provide guarantees regarding the performance of the treatment process. These guarantees shall be in respect of quality of treated effluent. The guarantees shall apply to the performance of the process plant for design flows and strengths given above. On completion of commissioning of the plant the following criteria shall apply:

3.4.5.1 Guaranteed Effluent Quality

Effluent quality requirements for the sewage treatment:

- BOD5 < 20 mg/l
- Suspended solids < 30 mg/l
- Total Dissolved Solids < 1,000 mg/l
- NH4 < 5 mg/l
- COD < 30 mg/l
- Dissolved Oxygen < 4 mg/l
- Total Residual Chlorine < 1 mg/l
- pH 7 - 9

For allowable trace mineral concentration standards, to refer to Schedule 3 - National Liquid Waste Standards of the Environment Management (Waste Disposal and Recycling) Regulations (of the Republic of Fiji) 2007.

The treated effluent shall be collected and used for irrigation purposes. The storage tanks shall be placed close to the WWTP and the treated effluent shall be distributed to the site via a pressurised piping system.

3.5 INTERFACE WORKS

Interface works with other trades including:

a) Building and structure.

b) Mechanical services.

c) Electrical services.

d) Fire services.

e) Civil & Infrastructure works exterior to the building.

3.6 HYDRAULICS SERVICES DRAWINGS

Hydraulic Services Drawings

DRAWING SCHEDULE

DWG No.	DETAILS	REV	DATE
PS-H000	Drawing Schedule, General Notes, Legends & Symbols and Abbreviations	0	21JUN21
PS-H009	Proposed Water Supply Connection to the Main Land	0	21JUN21
Water Supply			
PS-H010	Site - Domestic Water Distribution System up-stream Feed to Water Tanks	0	21JUN21
PS-H100	Enlarged Plan A & B	0	21JUN21
PS-H101	Enlarged Plan C & D	0	21JUN21
Drainage			
PS-H020	Site - Sewerage System with Waste Water Treatment Plant	0	21JUN21
PS-H110	Enlarged Plan E & F - Sewerage Holding Tank & Waste Water Treatment Plant	0	21JUN21
Irrigation			
PS-H030	Site - Irrigation distribution Layout	0	21JUN21
PS-H120	Enlarged Plan G - Irrigation Pump Room & Storage Tanks	0	21JUN21

ABBREVIATIONS

WWTP - Waste Water Treatment Plant
WTP - Water Treatment Plant
PS - Sewer Pumping Station

LEGENDS & SYMBOLS

—— - - —— Waste Pipe (WP)
— · — · — Soil Pipe (SP)
— · — · — Domestic Cold Water Pipe (DCW)
- · · — · · - Salt Water Intake
----------- Irrigation Line
⋈ Gate/Isolation Valve (G.V)
➢ Flow Direction

GENERAL NOTES:

1. ALL FITTINGS AND ACCESSORIES THAT ARE NECESSARY FOR THE COMPLETION OF THE PLUMBING WORKS TO BE INSTALLED BY THE HYDRAULIC CONTRACTOR.
2. ALL PLUMBING WORKS SHALL COMPLY WITH THE PUBLIC HEALTH (NATIONAL BUILDING CODE) REGULATION 2004.
3. ALL INSTALLATION OF PIPE WORKS SHALL COMPLY WITH THE AS/NZS 3500 PLUMBING & DRAINAGE CODE.
4. ALL PIPES SHOWN ARE IN NOMINAL DIAMETER AND IN MILLIMETERS OR OTHERWISE SPECIFIED.
5. NOISE / VIBRATION CONTROL FOR EQUIPMENT SHALL BE PROVIDED (E.G. RUBBER PADS, SPRING ISOLATION, ETC).
6. ALL DRAINAGE PIPE WORK INSTALLATIONS ARE TO COMPLY WITH THE MINIMUM GRADE OF DRAIN PIPES.
7. SANITARY, WASTE PIPEWORK SHALL BE UPVC PIPES.

COORDINATION ISSUE

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

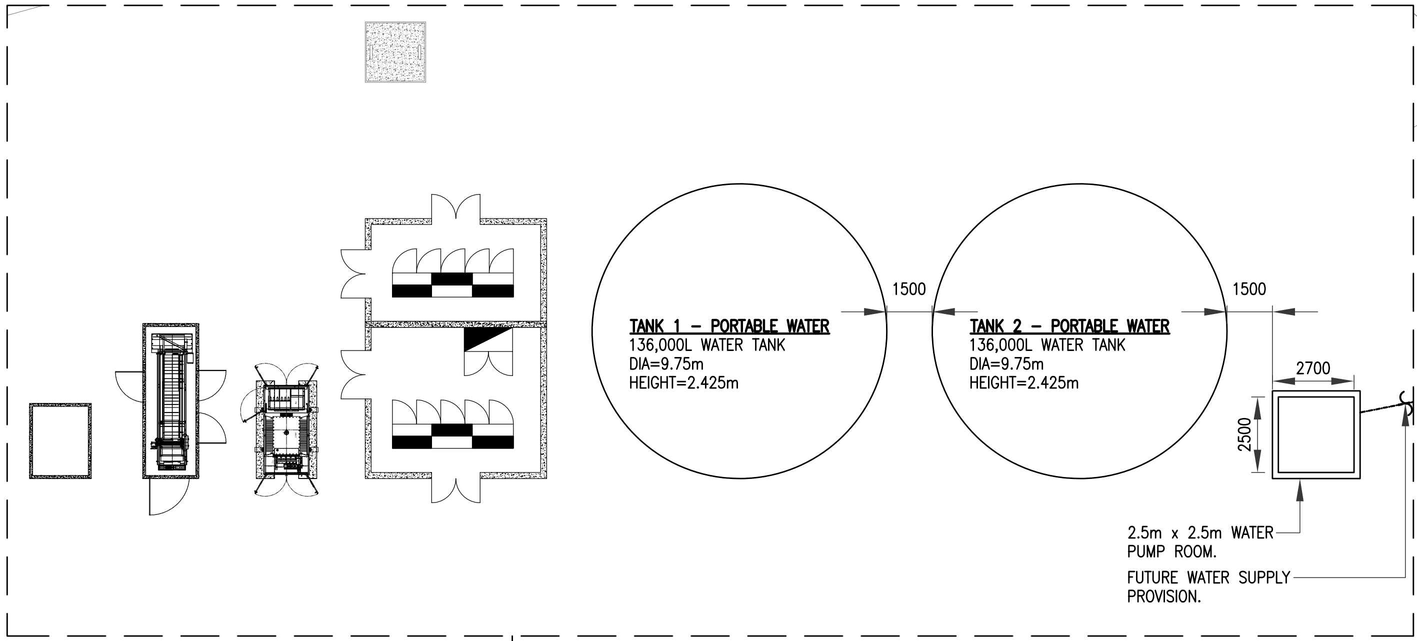
Project Title
PROPOSED RESORT DEVELOPMENT

Client
Max Jubin

Architect
ARCHITECTS PACIFIC
Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

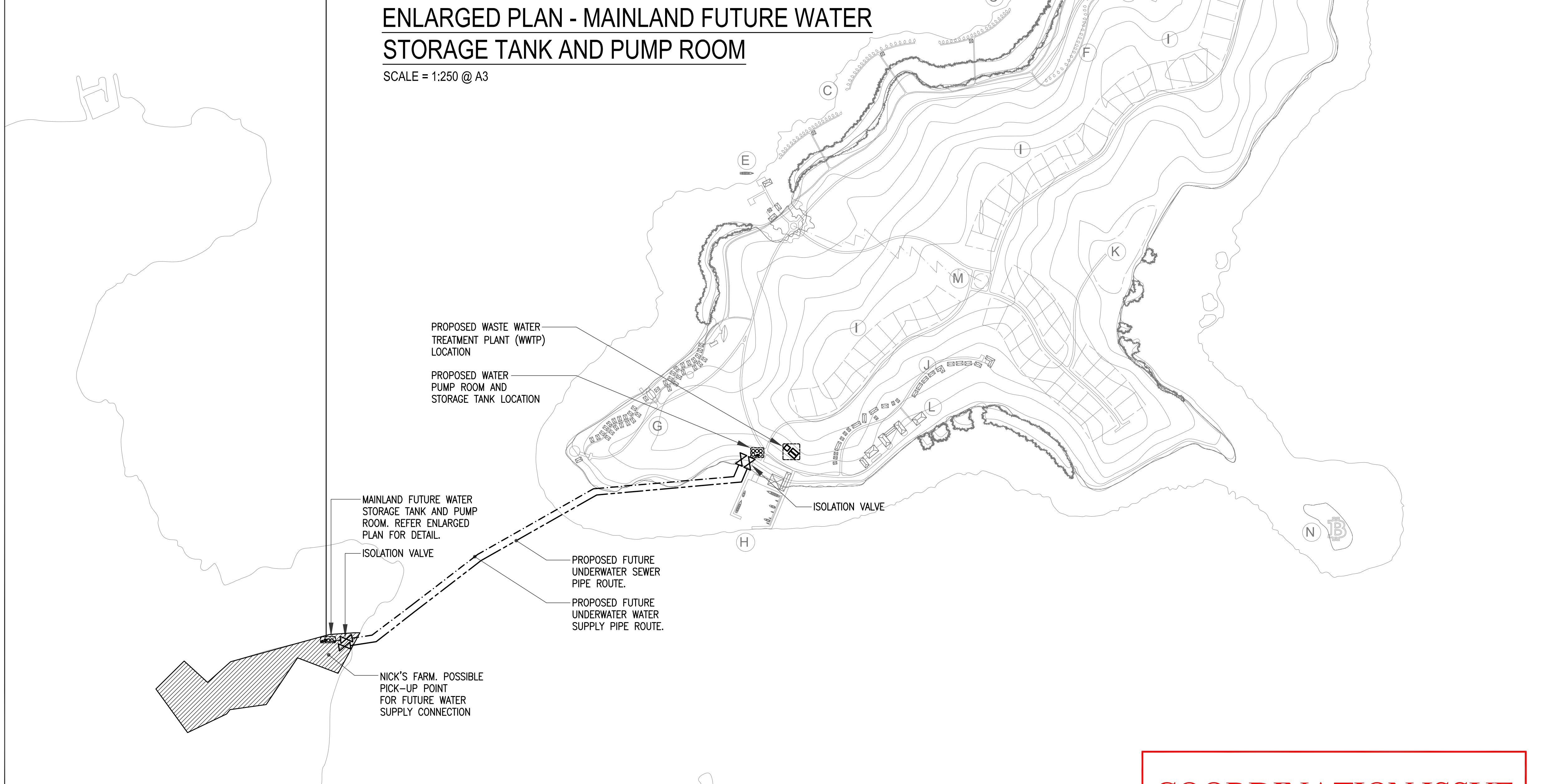
Engineering Consultant
Temo Consulting
Consultancy for Building Engineering & Project Management
P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI
Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

Designed	SA	Drawing Title: HYDRAULICS — DRAWING SCHEDULE, GENERAL NOTES, LEGENDS & SYMBOLS AND ABBREVIATIONS
Drawn	SA	
Checked	PM	
Approved	PAT	
Date	JUN 2021	Project Number / sheet: A3
A3 Scale: NTS	A1(NTS) / A2(NTS)	Drawing No: PS-H000 / Revision No: 0



ENLARGED PLAN - MAINLAND FUTURE WATER STORAGE TANK AND PUMP ROOM

SCALE = 1:250 @ A3



PROPOSED WATER SUPPLY & SEWER CONNECTION TO MAIN LAND

SCALE = 1:15,000 @ A3

COORDINATION ISSUE

NOTES:

1. This drawing shall be read in conjunction with the Design Features Report.
2. Allow 1.5m clearance around tanks for tank assembly.

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title

PROPOSED RESORT DEVELOPMENT

Client

Max Jubin

Architect

ARCHITECTS PACIFIC
Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant

Temo Consulting
Consultancy for Building Engineering & Project Management
P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI
Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

Designed	SA
Drawn	SA
Checked	PM
Approved	PAT
Date	JUN 2021
A3 Scale	1:15000
A1(1:7500)	
A2(NTS)	

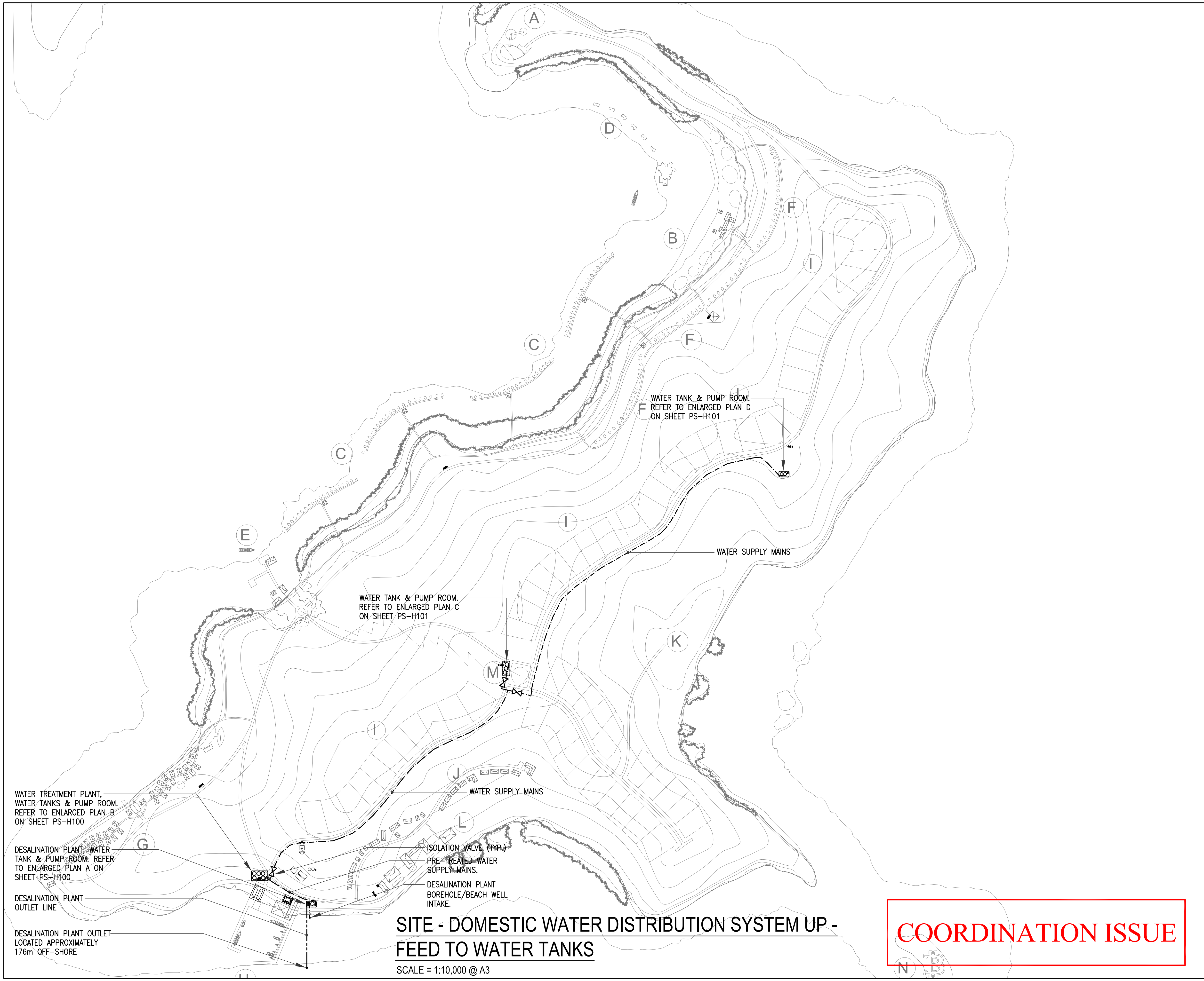
Drawing Title
HYDRAULICS
PROPOSED WATER SUPPLY & SEWER CONNECTION TO MAINLAND

Project Number

sheet: A3

Drawing No: PS-H009

Revision No: 0



SITE - DOMESTIC WATER DISTRIBUTION SYSTEM UP - FEED TO WATER TANKS

SCALE = 1:10,000 @ A3

COORDINATION ISSUE

NOTES:

1. This drawing shall be read in conjunction with the Design Features Report.

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title

PROPOSED RESORT DEVELOPMENT

Client

Max Jubin

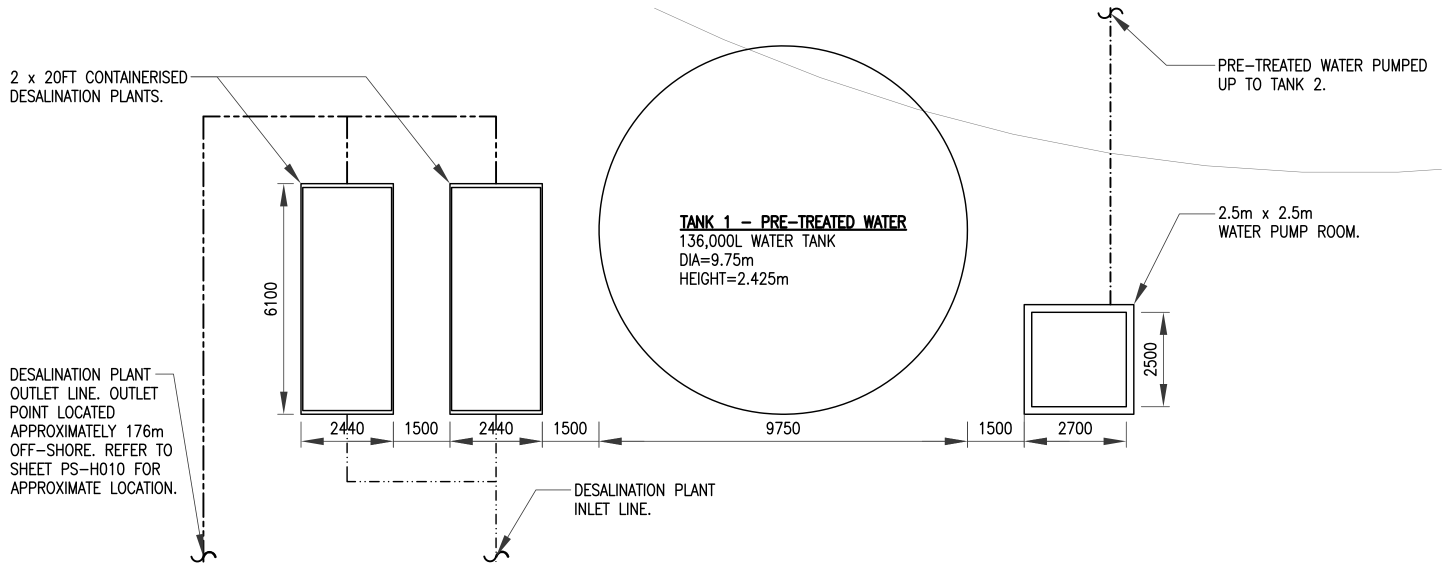
Architect

ARCHITECTS PACIFIC
Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant

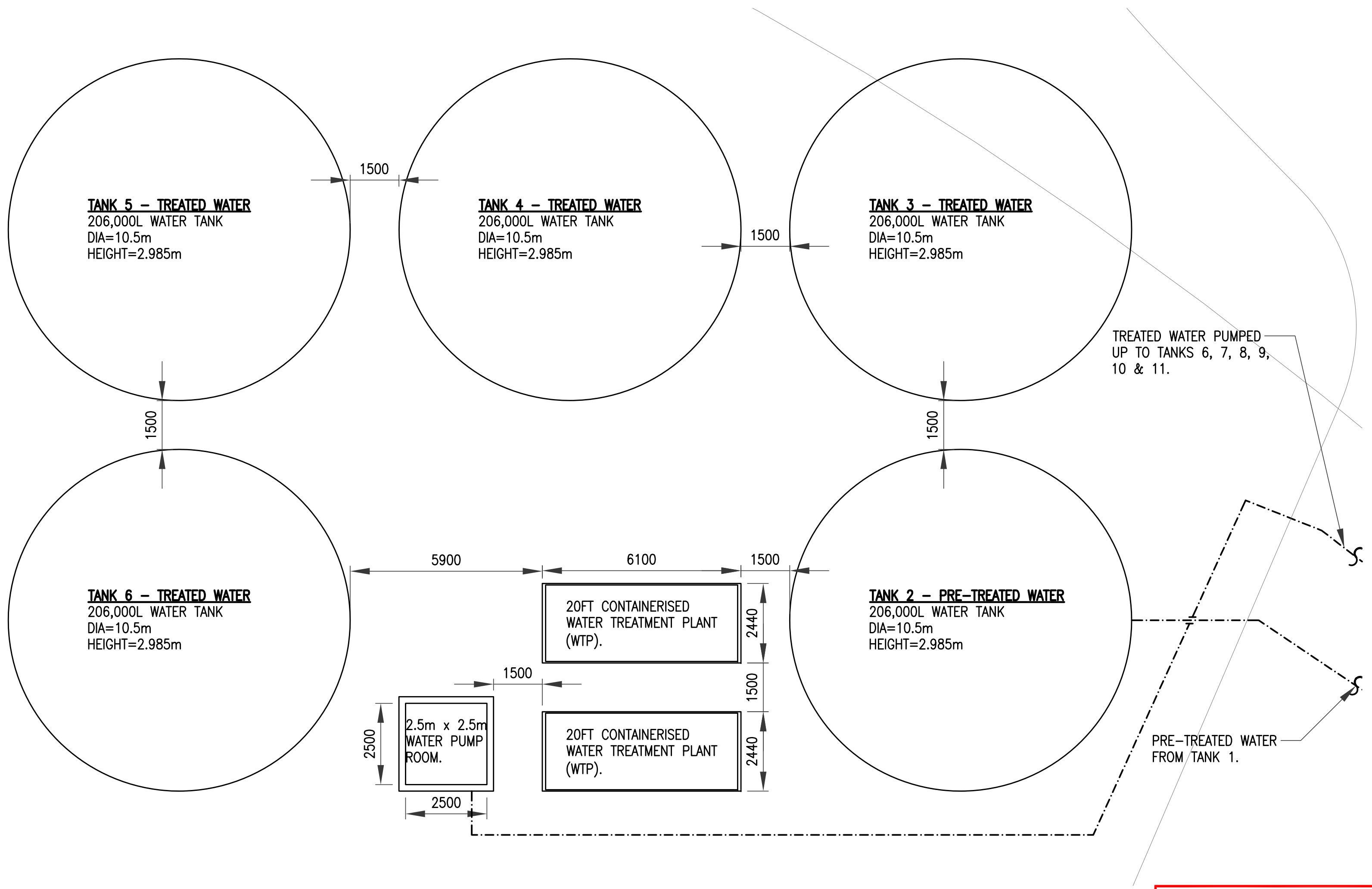
Temo Consulting
Consultancy for Building Engineering & Project Management
P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI
Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

Designed	SA	Drawing Title: HYDRAULICS
Drawn	SA	SITE - DOMESTIC WATER DISTRIBUTION SYSTEM UP-STREAM FEED TO WATER TANKS
Checked	PM	
Approved	PAT	
Date	JUN 2021	Project Number; sheet A3
A3 Scale 1:10000	A1(1:5000) A2(NTS)	Drawing No PS-H010; Revision No 0



ENLARGED PLAN A - DESALINATION PLANT, WATER TANK & PUMP ROOM PLAN

SCALE = 1:200 @ A3



ENLARGED PLAN B - WATER TREATMENT PLANT, WATER TANKS & PUMP ROOM PLAN

SCALE = 1:200 @ A3

COORDINATION ISSUE

NOTES:

1. This drawing shall be read in conjunction with the Design Features Report.
2. Allow 1.5m clearance around tanks for tank assembly

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title

PROPOSED RESORT DEVELOPMENT

Client

Max Jubin

Architect

ARCHITECTS PACIFIC
Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant

Temo Consulting
Consultancy for Building Engineering & Project Management
P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI
Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

Designed	SA
Drawn	SA
Checked	PM
Approved	PAT
Date	JUN 2021
A3 Scale	1:200
A1(1:100)	
A2(NTS)	

Drawing Title: HYDRAULICS
ENLARGED PLAN A & B

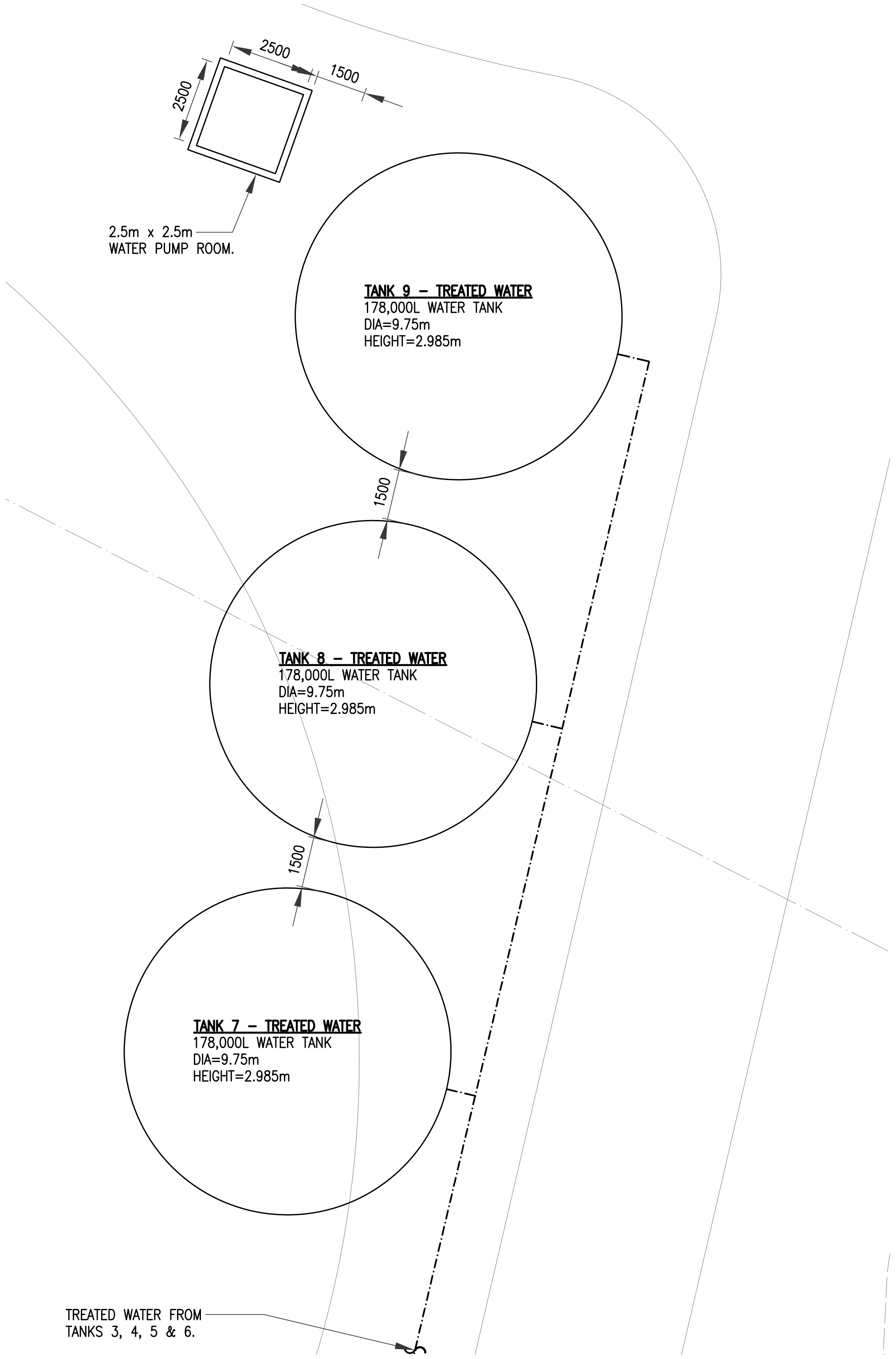
Project Number:

sheet: A3

Drawing No: PS-H100

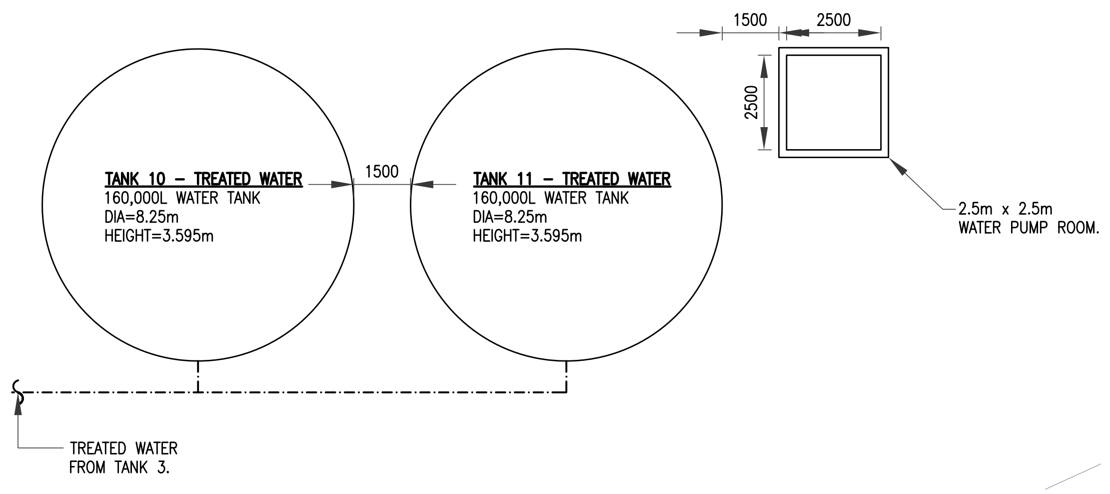
Revision No: 0

NOTES:
1. This drawing shall be read in conjunction with the Design Features Report.
2. Allow 1.5m clearance around tanks for tank assembly



ENLARGED PLAN C - WATER TANK & PUMP ROOM PLAN

SCALE = 1:200 @ A3



ENLARGED PLAN D - WATER TANK & PUMP ROOM PLAN

SCALE = 1:200 @ A3

COORDINATION ISSUE

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title

PROPOSED RESORT DEVELOPMENT

Client

Max Jubin

Architect

ARCHITECTS PACIFIC

Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant

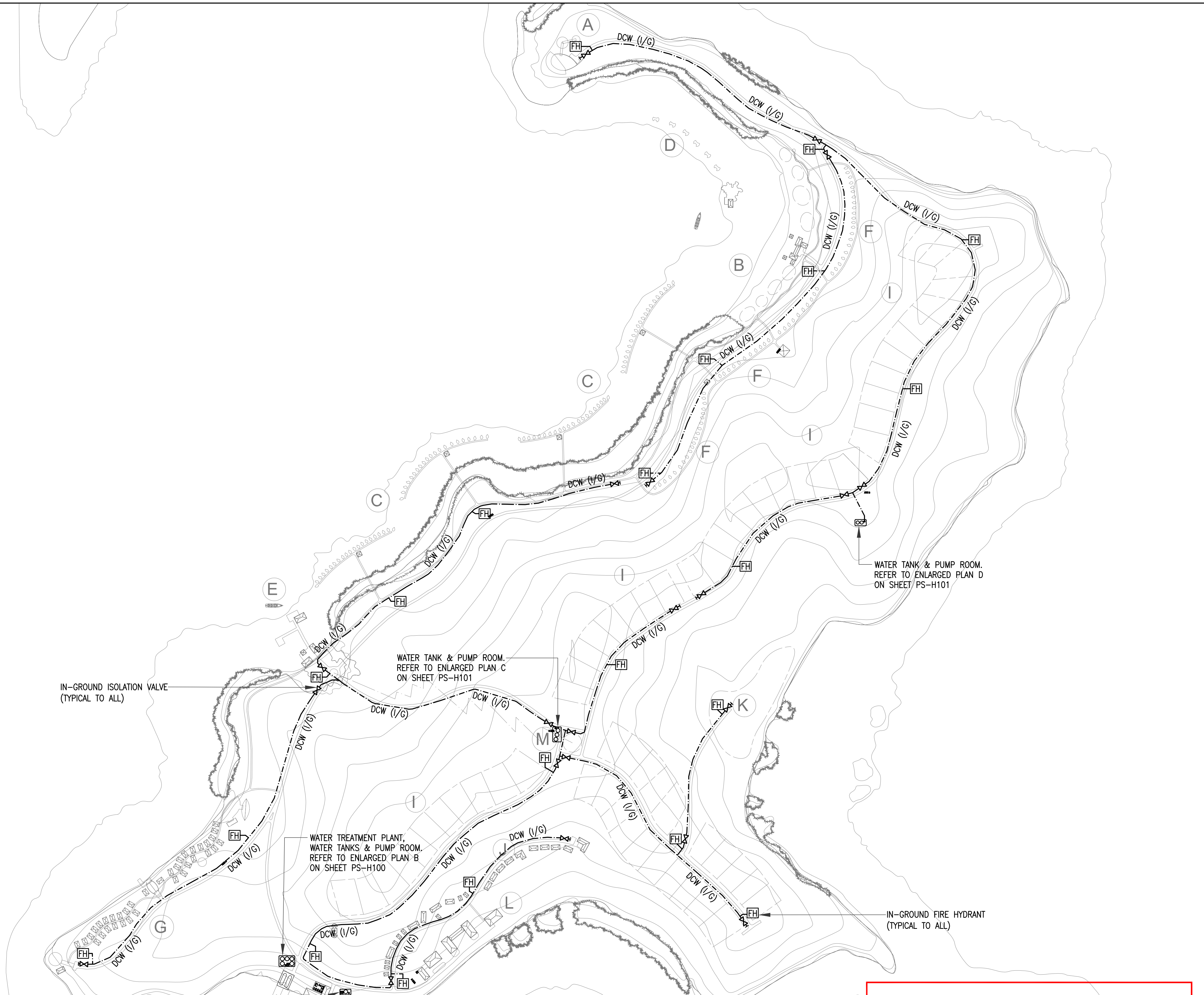
Temo Consulting

Consultancy for Building Engineering & Project Management

P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI

Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

Designed	SA	Drawing Title: HYDRAULICS ENLARGED PLAN C & D
Drawn	SA	
Checked	PM	
Approved	PAT	
Date	JUN 2021	Project Number / sheet: A3
A3 Scale 1:200	A1(1:100) A2(NTS)	Drawing No: PS-H101 / Revision No: 0



SITE - DOMESTIC WATER DISTRIBUTION SYSTEM - DOWNSTREAM FROM THE WATER TANKS

SCALE = 1:10,000 @ A3

COORDINATION ISSUE

NOTES:

1. This drawing shall be read in conjunction with the Design Features Report.

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title

PROPOSED RESORT DEVELOPMENT

Client

Max Jubin

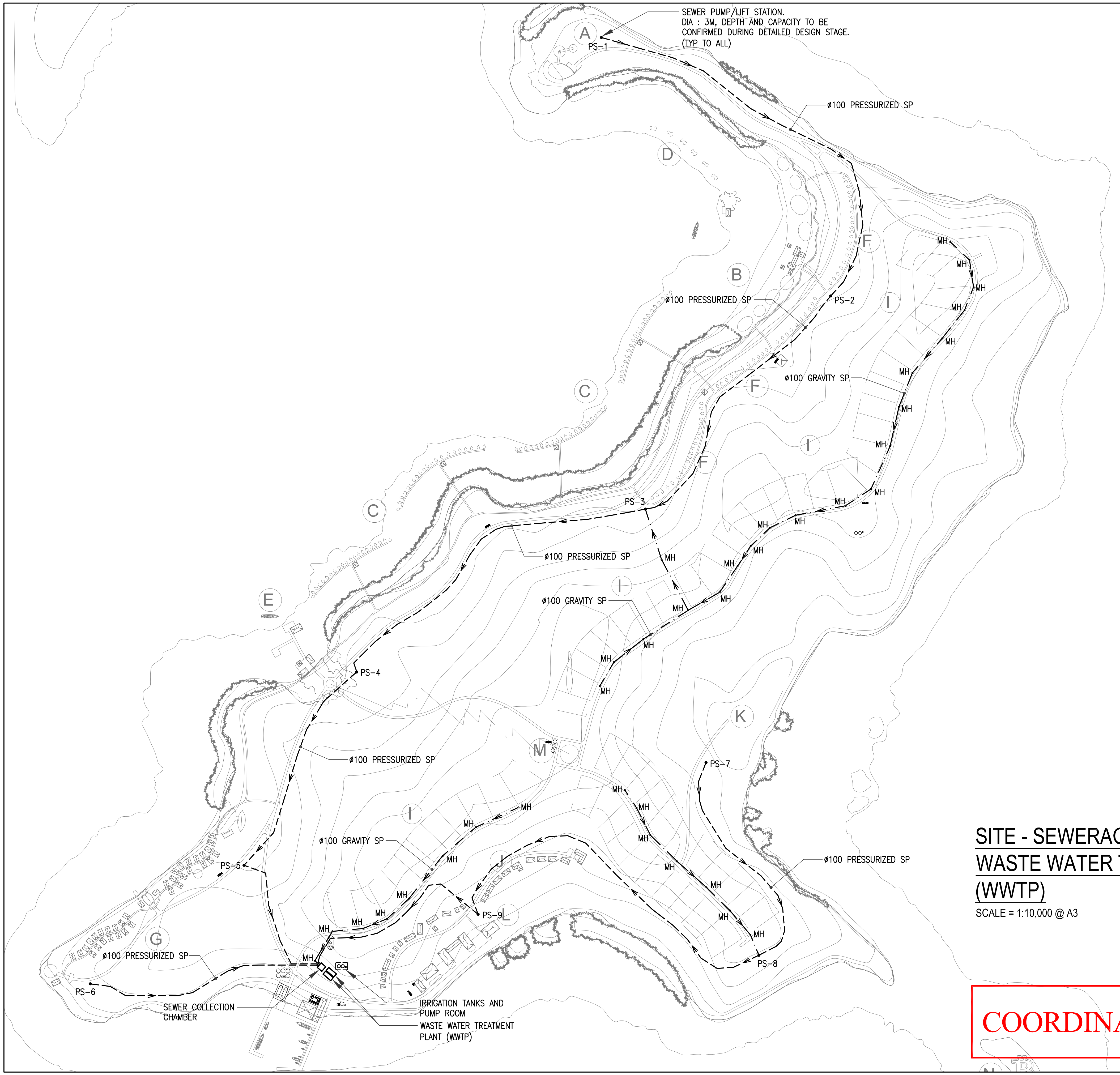
Architect

ARCHITECTS PACIFIC
Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant

Temo Consulting
Consultancy for Building Engineering & Project Management
P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI
Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

Designed	SA	Drawing Title	HYDRAULICS
Drawn	LN		SITE - DOMESTIC WATER DISTRIBUTION SYSTEM DOWN - STREAM FROM WATER TANKS
Checked	SA/PM		
Approved	PAT		
Date	JUN 2021	Project Number	sheet A3
A3 Scale 1:10000	A1(1:5000) A2(NTS)	Drawing No PS-H102	Revision No 0



SITE - SEWERAGE SYSTEM WITH WASTE WATER TREATMENT PLANT (WWTP)

SCALE = 1:10,000 @ A3

COORDINATION ISSUE

NOTES:

1. This drawing shall be read in conjunction with the Design Features Report.

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title

PROPOSED RESORT DEVELOPMENT

Client

Max Jubin

Architect

ARCHITECTS PACIFIC

Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant

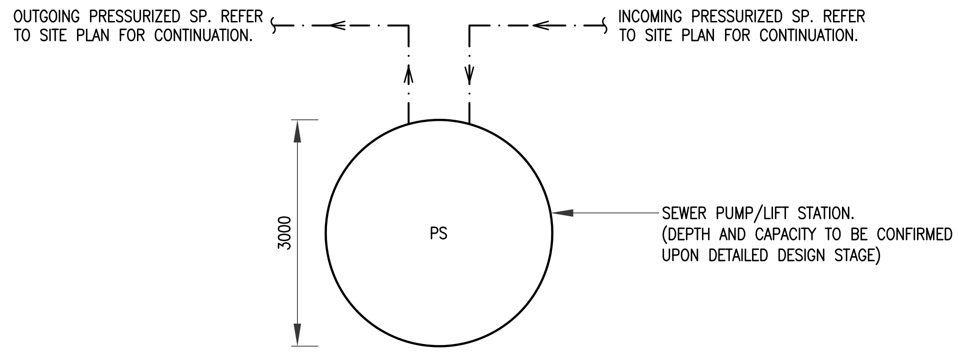
Temo Consulting

Consultancy for Building Engineering & Project Management

P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI

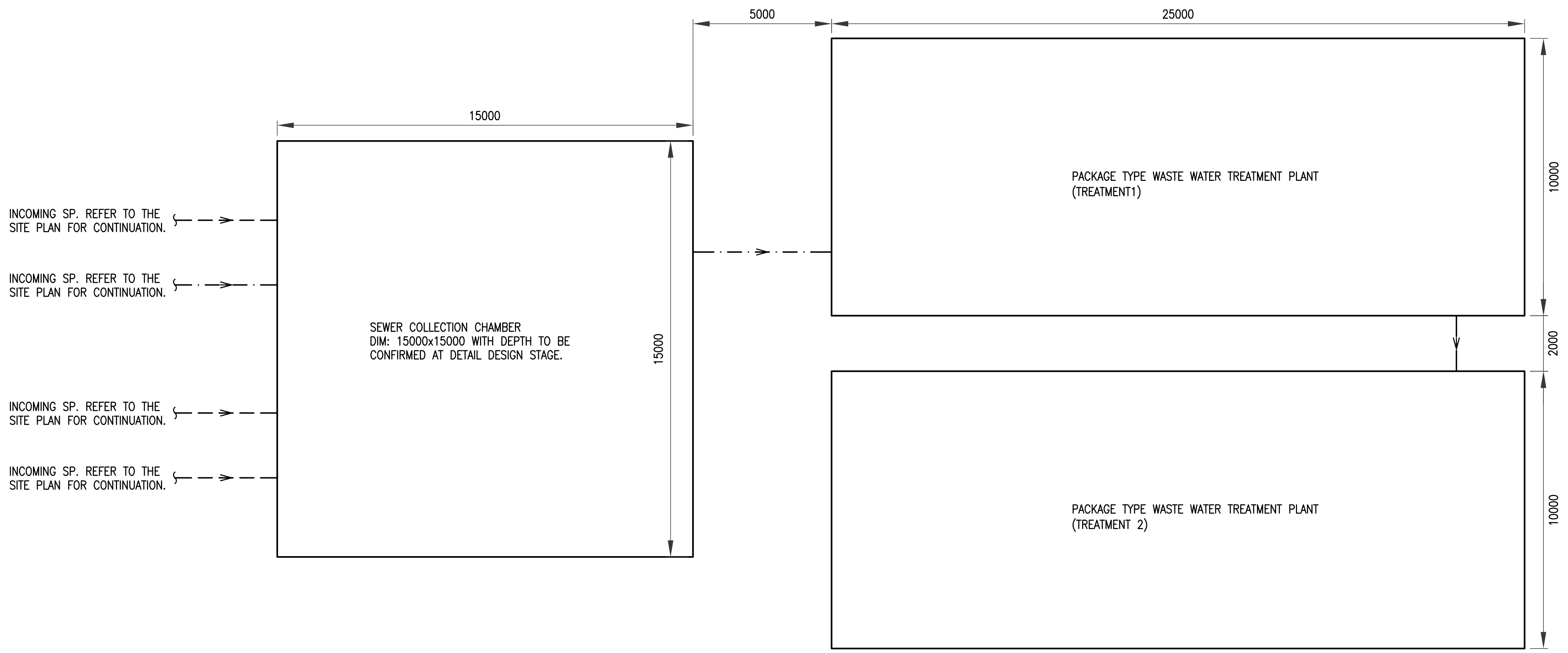
Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

Designed	SA	Drawing Title: HYDRAULICS
Drawn	SA	SITE - SEWARGE SYTEM WITH WASTE WATER TREATMENT PLANT
Checked	PM	
Approved	PAT	
Date	JUN 2021	Project Number
A3 Scale	1:10000	sheet: A3
A1(1:5000)	A2(NTS)	Drawing No: PS-H020 / Revision No: 0



ENLARGED PLAN E - PACKAGED TYPE SEWER PUMP/LIFT STATION

SCALE = 1:100 @ A3



ENLARGED PLAN F - SEWERAGE HOLDING TANK & WASTE WATER TREATMENT PLANT

SCALE = 1:200 @ A3

COORDINATION ISSUE

NOTES:

1. This drawing shall be read in conjunction with the Design Features Report.

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title

PROPOSED RESORT DEVELOPMENT

Client

Max Jubin

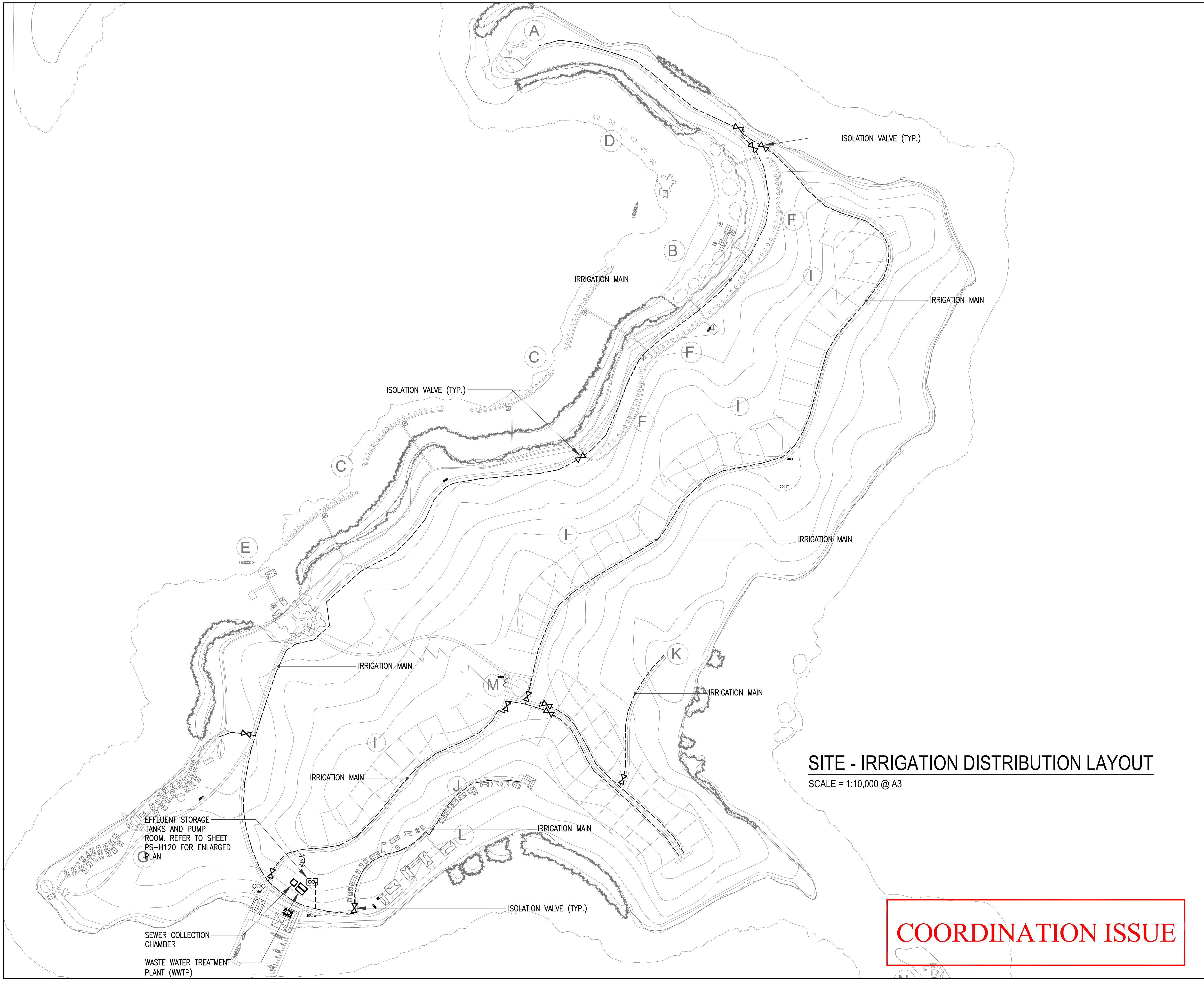
Architect

ARCHITECTS PACIFIC
Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant

Temo Consulting
Consultancy for Building Engineering & Project Management
P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI
Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

Designed	SA	Drawing Title: HYDRAULICS
Drawn	SA	ENLARGED PLAN E & F
Checked	PM	SEWERAGE HOLDING TANK &
Approved	PAT	WASTE WATER TREATMENT PLANT
Date	JUN 2021	Project Number; sheet A3
A3 Scale 1:200	A1(1:100) A2(NTS)	Drawing No PS-H110; Revision No 0



SITE - IRRIGATION DISTRIBUTION LAYOUT

SCALE = 1:10,000 @ A3

COORDINATION ISSUE

NOTES:

1. This drawing shall be read in conjunction with the Design Features Report.

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title

PROPOSED RESORT DEVELOPMENT

Client

Max Jubin

Architect

ARCHITECTS PACIFIC
Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant

Temo Consulting
Consultancy for Building Engineering & Project Management
P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI
Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

Designed	SA
Drawn	SA
Checked	PM
Approved	PAT
Date	JUN 2021
A3 Scale	1:10000
A1(1:5000)	
A2(NTS)	

Drawing Title

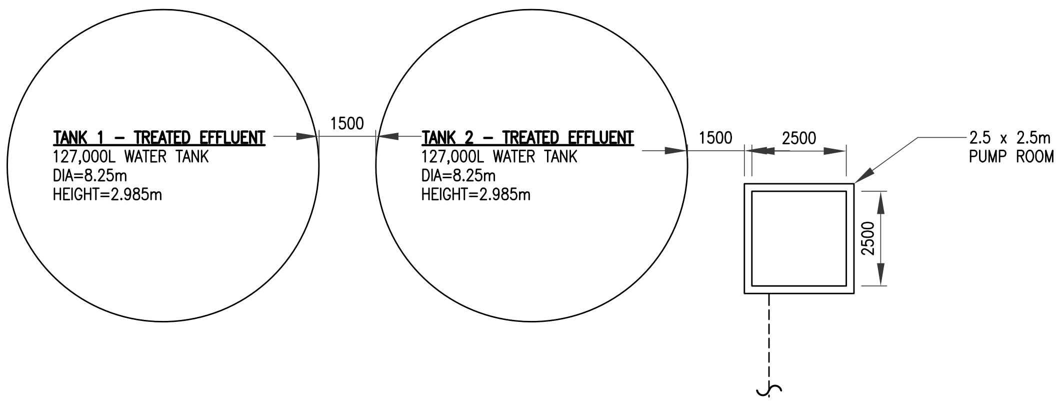
HYDRAULICS
SITE - IRRIGATION DISTRIBUTION LAYOUT

Project Number

sheet A3

Drawing No PS-H030

Revision No 0



ENLARGED PLAN G - IRRIGATION PUMP ROOM AND STORAGE TANKS

SCALE = 1:200 @ A3

NOTES:

1. This drawing shall be read in conjunction with the Design Features Report.
2. Allow 1.5m clearance around tanks for tank assembly

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title

PROPOSED RESORT DEVELOPMENT

Client

Max Jubin

Architect

ARCHITECTS PACIFIC
Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant

Temo Consulting
Consultancy for Building Engineering & Project Management
P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI
Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

Designed	SA
Drawn	SA
Checked	PM
Approved	PAT
Date	JUN 2021
A3 Scale	1:200
A1(1:100)	
A2(NTS)	

Drawing Title
HYDRAULICS
ENLARGED PLAN G - IRRIGATION PUMP ROOM AND STORAGE TANKS

Project Number

sheet A3

Drawing No PS-H120

Revision No 0

COORDINATION ISSUE

4. LPG SERVICES

4.1 GENERAL

Liquefied Petroleum Gas (LPG) supply will be provided from an LPG bulk storage tank with associated control valve, meter, regulator, and automatic shut off valve. The LPG bulk storage tank will be located in the designated plant area at the marina.

High-pressure gas supply pipework will be reticulated through the entire site. Low-pressure pipe work shall been branched off the high pressure line to feed the different areas. Safety shut-off valves shall be provided at selected locations.

The LPG system works shall be designed and installed by a specialist LPG supplier.

4.2 LPG SERVICES DRAWINGS

LPG Services Drawings

DRAWING SCHEDULE

DWG No.	DETAILS	REV	DATE
PS-G000	Drawing Schedule, General Notes, Legends & Symbols and Abbreviations	0	21JUN21
PS-G010	Site - Domestic Water Distribution System up-stream Feed to Water Tanks	0	21JUN21
PS-G100	Enlarged Plan A & B	0	21JUN21

ABBREVIATIONS

LPG - Liquefied Petroleum Gas

LEGENDS & SYMBOLS

—·—·—·— LPG Supply Mains

⋈ Gate/Isolation Valve (G.V)

COORDINATION ISSUE

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title

PROPOSED RESORT DEVELOPMENT

Client

Max Jubin

Architect

ARCHITECTS PACIFIC
Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant

Temo Consulting
Consultancy for Building Engineering & Project Management
P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI
Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

Designed	SA
Drawn	SA
Checked	PM
Approved	PAT
Date	JUN 2021
A3 Scale	NTS
A1(NTS)	
A2(NTS)	

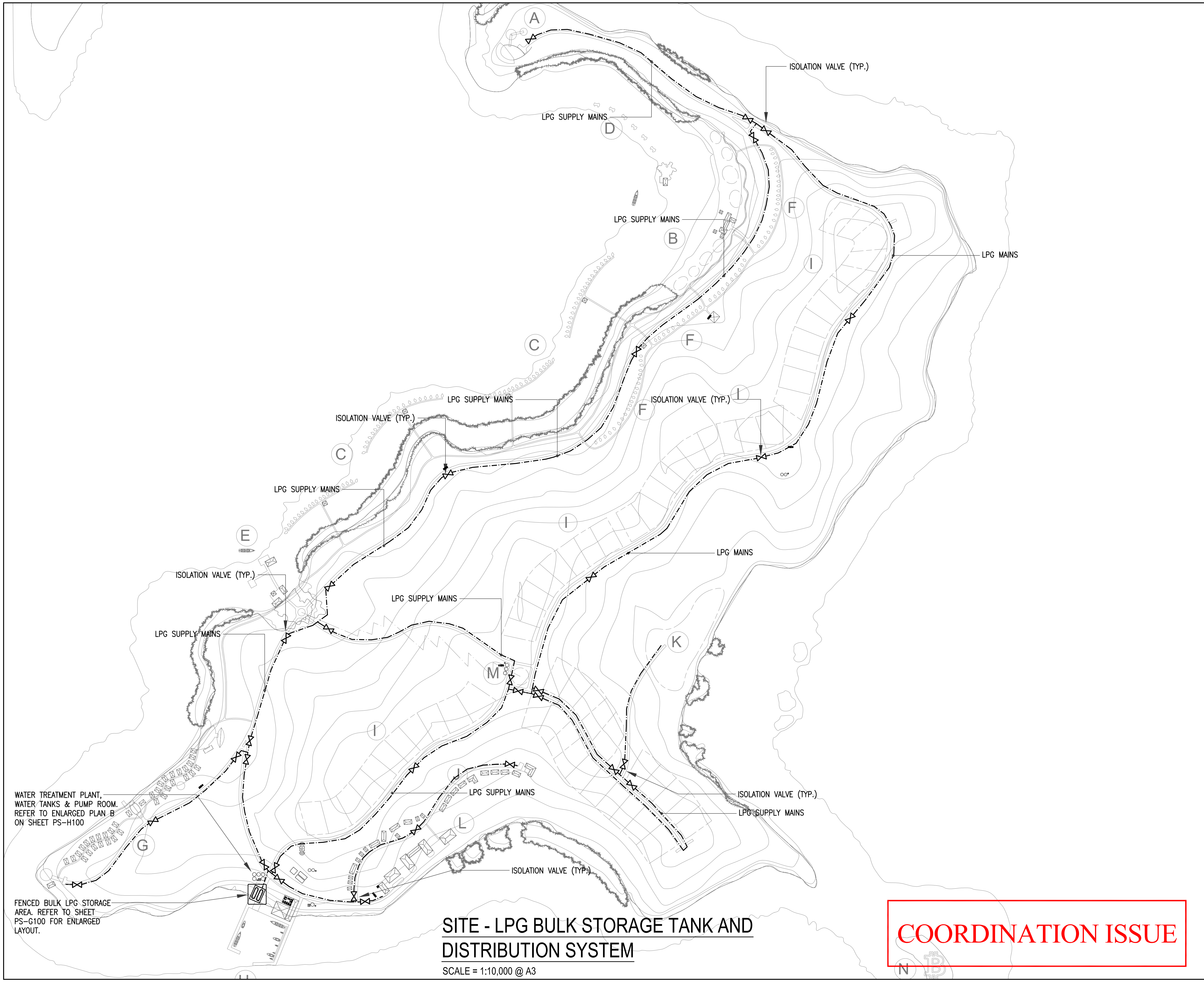
Drawing Title
LPG
DRAWING SCHEDULE, GENERAL NOTES, LEGENDS & SYMBOLS AND ABBREVIATIONS

Project Number

sheet A3

Drawing No PS-G000

Revision No 0



SITE - LPG BULK STORAGE TANK AND DISTRIBUTION SYSTEM

SCALE = 1:10,000 @ A3

COORDINATION ISSUE

NOTES:

1. This drawing shall be read in conjunction with the Design Features Report.

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

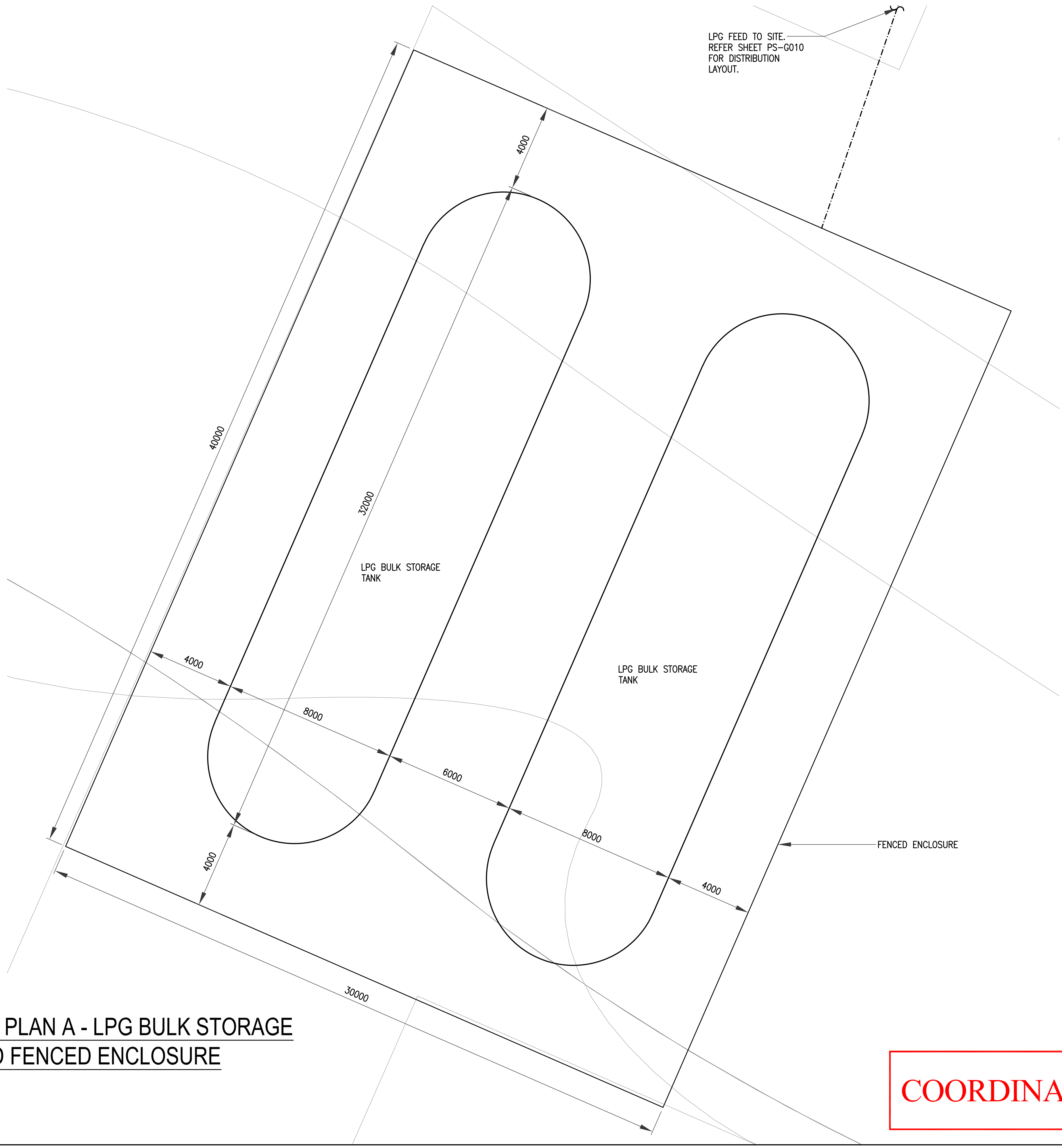
Project Title
PROPOSED RESORT DEVELOPMENT

Client
Max Jubin

Architect
ARCHITECTS PACIFIC
Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant
Temo Consulting
Consultancy for Building Engineering & Project Management
P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI
Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

Designed	SA	Drawing Title	LPG SITE - LPG BULK STORAGE TANK AND DISTRIBUTION SYSTEM
Drawn	SA		
Checked	PM		
Approved	PAT		
Date	JUN 2021	Project Number	sheet A3
A3 Scale 1:10000	A1(1:5000) A2(NTS)	Drawing No PS-G010	Revision No 0



ENLARGED PLAN A - LPG BULK STORAGE TANKS AND FENCED ENCLOSURE

SCALE = 1:200 @ A3

COORDINATION ISSUE

NOTES:

1. This drawing shall be read in conjunction with the Design Features Report.

Revision	Date	Initial	Description
0	21JUN21	PAT	COORDINATION ISSUE

Project Title

PROPOSED RESORT DEVELOPMENT

Client

Max Jubin

Architect

ARCHITECTS PACIFIC
Architects Pacific Ltd, 108 Amy Street, P O Box 1171, Suva, Fiji Islands
Phone (679) 330 3855 Fax (679) 330 2174
Email mail@architectspacific.com

Engineering Consultant

Temo Consulting
Consultancy for Building Engineering & Project Management
P.A.T Consulting Limited
16 Gorrie St
Level 3, Tuvalu House
PO Box 16567
Suva, FIJI
Phone +679 3316 478
Mobile +679 7726 800
Fax +679 3303 234
Email ptemo@temoconsulting.com

Designed	SA	Drawing Title: LPG ENLARGED PLAN A - LPG BULK STORAGE TANKS AND FENCED ENCLOSURE
Drawn	SA	
Checked	PM	
Approved	PAT	
Date	JUN 2021	Project Number; sheet A3
A3 Scale 1:200	A1(1:100) A2(NTS)	Drawing No PS-G100; Revision No 0